

LEGISLATIVE COUNCIL BRIEF

Merchant Shipping (Prevention and Control of Pollution) Ordinance
(Cap. 413)

Merchant Shipping (Prevention of Air Pollution) Regulation

and

Merchant Shipping (Prevention and Control of Pollution) (Fees) (Amendment) Regulation 2016

INTRODUCTION

A
B
The Secretary for Transport and Housing (STH) has made the Merchant Shipping (Prevention of Air Pollution) Regulation (Repeal) Regulation, at **Annex A**, and the Merchant Shipping (Prevention of Air Pollution) Regulation (the Regulation), at **Annex B**, under section 3 of the Merchant Shipping (Prevention and Control of Pollution) Ordinance (Cap.413) (the Ordinance) to implement the latest requirements prescribed by the International Maritime Organization (IMO) to prevent air pollution from ships.

2. At the meeting of the Executive Council on 26 January 2016, the Council ADVISED and the Chief Executive ORDERED that, under section 3(2A) of the Ordinance, the Merchant Shipping (Prevention and Control of Pollution) (Fees) (Amendment) Regulation 2016 (the Fees

C Amendment Regulation), at **Annex C**, should be made.

JUSTIFICATIONS

IMO Requirements

3. In 1973, IMO adopted the “International Convention for the Prevention of Pollution from Ships” (universally known as MARPOL) to prevent and minimise pollution from ships. MARPOL contains six technical Annexes to address different forms of pollution from ships¹, which have been implemented in Hong Kong by way of subsidiary legislation under the Ordinance.

4. MARPOL Annex VI, “Regulations for the Prevention of Air Pollution from Ships”, entered into force in 2005. Its requirements were reflected in the Merchant Shipping (Prevention of Air Pollution) Regulation (Cap. 413M) in 2007, which came into force in 2008. It imposes control on —

- (a) emissions of ozone depleting substances (“ODS”), nitrogen oxides (“NO_x”), sulphur oxides (“SO_x”) and volatile organic compounds (“VOC”) from ships;
- (b) shipboard incineration; and
- (c) the quality of fuel oil used on board.

5. To ensure compliance with the above controls, the Regulation requires ships of 400 gross tonnage or above, whether Hong Kong ships (wherever they may be) or non-Hong Kong ships within the waters of Hong

¹ The six technical Annexes addressing different forms of pollution from ships are as follows -
Annex I: Pollution by oil;
Annex II: Pollution by noxious liquid substances in bulk;
Annex III: Pollution by harmful substances carried by sea in packaged form;
Annex IV: Pollution by sewage from ships;
Annex V: Pollution by garbage from ships; and
Annex VI: Air pollution from ships.

Kong, to carry on board the International Air Pollution Prevention Certificate (IAPP Certificate) or the Hong Kong Air Pollution Prevention Certificate (HKAPP Certificate) before engaging in international or non-international voyages. Surveys of ships are conducted to monitor compliance. Non-compliance with the requirements stipulated in the Regulation constitutes an offence.

Legislative Proposals

(1) Incorporating the Latest IMO Requirements

6. To implement the latest IMO requirements, we propose to tighten the emission standards for air pollutants generated by ships, as follows —

- (a) reduce permitted sulphur content level of the fuel oil used on board ships from 4.5%/m/m to 3.5%/m/m from 1 July 2016 until 31 December 2019, and then to 0.5%/m/m on or after 1 January 2020²;
- (b) reduce NO_x emission level from marine diesel engines with a power output over 130kW. For ships constructed after 1 January 2011, the permitted NO_x emission level would be reduced by about 18%;
- (c) require ships of 400 gross tonnage or above to maintain a list of ODS-containing systems and equipment on board. Ships with rechargeable systems³ that contain ODS are required to maintain a record of such discharge in an ODS Record Book;
- (d) require all oil tankers to implement a VOC Management Plan, setting out ship-specific procedures for minimising VOC emissions and identifying persons responsible for implementing the plan; and

² Two phases of implementation are stipulated in MARPOL Annex VI Regulation 14.

³ Rechargeable systems are systems at which the gases can be re-filled.

- (e) require shipboard incineration to be undertaken in shipboard facilities designed for that purpose and expand the materials prohibited for shipboard incineration⁴ to include sewage sludge and sludge oil not generated on board the ship, and residues from exhaust gas cleaning system⁵.

7. In line with the latest requirement stipulated in MARPOL Annex VI, we propose to impose requirements on the energy efficiency level for different types of ocean-going vessels (OGVs) of 400 gross tonnage and above⁶ according to their dates of construction or major conversion to control emission of greenhouse gases (mainly carbon dioxide) from ships. To ensure compliance, these OGVs are required to obtain and carry on board an International Energy Efficiency Certificate (IEE Certificate). The IEE Certificate will be issued after a ship has conducted initial surveys⁷ and if necessary, additional surveys.

(2) Structure of the Regulation and the Application of DRA

8. In the current Regulation, the control requirements for ships engaged in international voyages (i.e. “OGVs”) and ships engaged in non-international voyages (i.e. “local vessels”) are set out in the same set of provisions. Given that the standards applied to local vessels may be different from those applied to OGVs⁸, we propose to improve the structure by separating the provisions for OGVs and local vessels respectively. The revised structure is more reader-friendly and would facilitate future updating of the control requirements for either type of vessels.

9. In line with other marine legislation, we will adopt a “direct reference approach” (DRA) in the Regulation, i.e. making direct reference to

⁴ The prohibited materials include, for example, certain residues of cargoes, polychlorinated biphenyls (PCBs), certain garbage containing more than traces of heavy metals, and refined petroleum products containing halogen compounds.

⁵ An exhaust gas cleaning system removes sulphur and particulate matter from a ship’s flue gas.

⁶ Although ships below 400 gross tonnage are not subject to the energy efficiency requirements, they are still subject to the emission requirements

⁷ Initial survey is a survey of a ship usually before it is put into service.

⁸ As stipulated in MARPOL Annex VI, some requirements such as the energy efficiency requirements only apply to OGVs.

provisions under international agreements in local legislation. As a guiding principle, DRA is adopted where it is necessary to set out the technical details of the IMO requirements (e.g. emission standards). DRA is primarily adopted for OGVs. A list of provisions which adopt DRA is set out at **Annex D**.

D

(3) Fees Amendment Regulation

Charging of Fees

10. Ship surveys can be conducted by a Government surveyor and the IEE Certificate can be issued by DM. We need to amend the Merchant Shipping (Prevention and Control of Pollution) (Fees) Regulation (Cap. 413L) (the Fees Regulation) to provide for charging of fees⁹ for these services.

11. We propose to set the fees at the same levels as those for similar surveying and certification services provided by the Marine Department (MD) under existing regulations, which are determined on a cost-recovery basis, as the workflow and resources involved are similar. In this regard, the fees for survey carried out by a Government surveyor within Hong Kong are currently set at \$3,270 for the first hour or part hour, and \$1,115 for each subsequent hour or part hour. The fee for the issue of a certificate is currently set at \$565.

The Regulation

12. The main provisions of the Regulation to implement the latest requirements of MARPOL Annex VI are set out as below —

⁹ The Chief Executive in Council has the power to prescribe the fees concerned under section 3(2A) of the Ordinance.

- (a) Part 2 sets out requirements applicable to OGVs for air pollutants from ships, shipboard incineration, fuel oil quality, energy efficiency, and the offences concerned;
- (b) Part 3 sets out requirements applicable to local vessels for air pollutants from ships, shipboard incineration, fuel oil quality, and the offences concerned;
- (c) Part 4 contains provisions in relation to the issue and cancellation of different certificates;
- (d) Part 5 contains provisions in relation to surveys; and
- (e) Part 7 and Part 8 set out the powers of Government surveyors and DM respectively.

The Fees Amendment Regulation

13. The Fees Amendment Regulation seeks to prescribe the fees for the survey and certification of ships carried out by MD under the Regulation. The main provisions are to —

- (a) amend Schedule 1 to the Fees Regulation so that fees are payable for all the surveys carried out under the Regulation; and
- (b) amend Schedule 2 to the Fees Regulation to extend the scope of fees payable to the issue of IEE Certificates under the Regulation.

LEGISLATIVE TIMETABLE

14. The Regulation and the Fees Amendment Regulation will be published in the Gazette on 29 January 2016 and introduced into the Legislative Council on 3 February 2016.

IMPLICATIONS OF THE PROPOSAL

15. The proposal will contribute to environmental protection and sustainability of the marine environment. It does not have any significant economic implications since the charging of fees for the survey and certification services provided by MD will have minimal impact on the operating costs of the vessels concerned. Financial and civil service implications are negligible. The fees are set on a cost-recovery basis and the revenue generated from the fees is expected to be very small in amount given that there may only be a few cases each year. It is worth noting that MD is not the only authority to issue the certificates under the Regulation. It is common practice for the shipping industry to choose Recognised Organisations¹⁰ to carry out the statutory surveys, and the certificates issued by them are recognised by MD. As such, it is expected that additional caseload to be handled by MD, if any, would be very small.

16. The proposal is in conformity with the Basic Law, including provisions concerning human rights. It will not affect the current binding effect of the Ordinance. The proposal has no productivity, gender or family implications.

PUBLIC CONSULTATION

17. On 24 June 2013, we consulted the Legislative Council Panel on Economic Development on our proposal to incorporate the latest standards of MARPOL Annex VI to our local legislation. Members endorsed our proposal. The Shipping Consultative Committee, the Local Vessels Advisory Committee and the High Speed Craft Consultative Committee, which comprise various stakeholders in the shipping industry, were consulted and they supported the proposal.

¹⁰ Recognised Organisations are international bodies specialised in the technical areas of ships, such as ship construction, equipment, operation and surveys, etc. At present, MD has entrusted Recognised Organisations through contractual agreements to carry out certain services, such as survey of ships and issue of certificates after survey, etc.

PUBLICITY

18. A press release will be issued on 29 January 2016. A spokesperson will be available to handle enquires.

OTHERS

19. Any enquiries on this brief can be addressed to Ms Louisa YAN, Principal Assistant Secretary for Transport and Housing (Transport) (Tel: 3509 8162) or Mr YK LAI, Chief, Maritime Policy of Marine Department (Tel: 2852 4603).

**Transport and Housing Bureau
January 2016**

**Merchant Shipping (Prevention of Air Pollution)
Regulation (Repeal) Regulation**


(Made by the Secretary for Transport and Housing under section 3 of the
Merchant Shipping (Prevention and Control of Pollution) Ordinance
(Cap. 413))

1. Commencement

This Regulation comes into operation on 1 July 2016.

2. Repeal

The Merchant Shipping (Prevention of Air Pollution) Regulation
(Cap. 413 sub. leg. M) is repealed.


Secretary for Transport and Housing

2016

Explanatory Note

This Regulation repeals the Merchant Shipping (Prevention of Air
Pollution) Regulation (Cap. 413 sub. leg. M) in view of the making
of the new Merchant Shipping (Prevention of Air Pollution)
Regulation.

Merchant Shipping (Prevention of Air Pollution) Regulation

Contents

Section	Page
Part 1	
Preliminary	
1. Commencement.....	1
2. Interpretation.....	1
3. Application.....	7
Part 2	
Ships Engaged in International Voyages	
Division 1—Application and Requirement for Certificates	
4. Application of this Part	8
5. Ships engaged in international voyages to have certain certificates	8
6. Exception to section 5	9
Division 2—Emission of Ozone Depleting Substances	
7. Prohibition on emission of ozone depleting substances.....	10
8. Installations containing ozone depleting substances prohibited.....	10
9. Delivery of ozone depleting substances to reception facilities.....	11

Section	Page
10. Duty to maintain list of equipment containing ozone depleting substances.....	11
11. Duty to maintain Record Book.....	12
12. Entries in Record Book.....	12
Division 3—Emission of Nitrogen Oxides	
13. Application of this Division.....	13
14. Diesel engines must operate within emission limit	13
15. Determination of emission.....	13
Division 4—Sulphur Content of Fuel Oil	
16. Interpretation.....	13
17. Sulphur content of fuel oil	13
18. Change-over of fuel oil on entering or leaving SO _x Emission Control Area	14
Division 5—Volatile Organic Compounds	
19. Interpretation.....	15
20. Use of collection system	15
21. Tanker carrying crude oil to have VOC Management Plan.....	16
Division 6—Shipboard Incineration	
22. Interpretation.....	16
23. Requirements on shipboard incineration for ships within waters of Hong Kong	17

Section	Page
24. Requirements on shipboard incineration for Hong Kong ships outside waters of Hong Kong.....	18
25. Additional requirements for post-2000 incinerators	19
Division 7—Fuel Oil Quality	
26. Application of this Division.....	20
27. Fuel oil quality	21
Division 8—Energy Efficiency Design Index	
28. Application of this Division.....	21
29. Attained Energy Efficiency Design Index	21
Division 9—Ship Energy Efficiency Management Plan	
30. Ship Energy Efficiency Management Plan	22
Division 10—Offences	
31. Offences and penalties	22
Part 3	
Ships Engaged in Non-international Voyages	
Division 1—Application and Requirement for Certificates	
32. Application of this Part	25
33. Ships engaged in non-international voyages to have certain certificates	25
34. Exception to section 33	25
Division 2—Emission of Ozone Depleting Substances	

Section	Page
35. Prohibition on emission of ozone depleting substances.....	26
36. Installations containing ozone depleting substances prohibited	26
37. Delivery of ozone depleting substances to reception facilities.....	27
38. Duty to maintain list of equipment containing ozone depleting substances	27
39. Duty to maintain Record Book	28
40. Entries in Record Book	28
Division 3—Emission of Nitrogen Oxides	
41. Application of this Division and interpretation	29
42. Diesel engines installed on ships constructed on or after commencement of this Regulation and certain other diesel engines must operate within emission limits	30
43. Diesel engines installed on ships constructed before commencement of this Regulation and certain other diesel engines must operate within emission limits	31
44. Emission limits in section 42 to prevail	32
45. Determination of emission	32
Division 4—Sulphur Content of Fuel Oil	
46. Sulphur content of fuel oil	32
Division 5—Volatile Organic Compounds	
47. Interpretation.....	33

Section	Page
48. Use of collection system	33
49. Tanker carrying crude oil to have VOC Management Plan.....	34
Division 6—Shipboard Incineration	
50. Interpretation.....	34
51. Requirements on shipboard incineration for ships within waters of Hong Kong	35
52. Requirements on shipboard incineration for Hong Kong ships outside waters of Hong Kong.....	36
53. Additional requirements for post-2000 incinerators	37
Division 7—Fuel Oil Quality	
54. Application of this Division.....	38
55. Fuel oil quality	38
Division 8—Offences	
56. Offences and penalties	39
Part 4	
IAPP Certificates, HKAPP Certificates and IEE Certificates	
Division 1—Application	
57. Application of this Part	41
Division 2—Issue of Certificates	
58. Issue of IAPP Certificates	41
59. Issue of HKAPP Certificates	42

Section	Page
60. Issue of IEE Certificates	42
Division 3—Withdrawal and Cancellation of Certificates	
61. Withdrawal of Certificates	44
62. Cancellation of Certificates	45
63. Offences and penalties	45
Division 4—Duration of Certificates	
64. Duration of Certificates.....	46
65. Duration of specified Certificates issued after renewal surveys.....	47
66. Duration of specified Certificates after early completion of surveys.....	47
67. Extension of validity period of specified Certificates in certain circumstances	48
Division 5—Cessation of Certificates	
68. Specified Certificates cease to be valid.....	48
69. International Energy Efficiency Certificates cease to be valid.....	49
Division 6—Form, Alteration and Certified True Copies of Certificates	
70. Form of Certificates	49
71. Alteration of Certificates.....	49
72. Certified true copies of Certificates	50
Division 7—Saving	

Section	Page
73. Certificates issued under repealed Regulation to be regarded as Certificates issued under this Regulation	50
Part 5	
Surveys	
Division 1—Application	
74. Application of this Part	51
Division 2—Surveys in relation to Specified Certificates	
75. Initial surveys.....	51
76. Renewal surveys	52
77. Intermediate surveys	53
78. Annual surveys	54
79. Additional surveys.....	55
80. Offences and penalties	57
Division 3—Surveys in relation to IEE Certificates	
81. Initial surveys.....	57
82. Additional survey	58
Part 6	
Other Duties	
83. Duty to maintain condition of ships	60
84. Certain alterations subject to approval of Director	60
85. Certificates to be kept on board.....	60

Section	Page
86. Duty to report accidents or defects.....	62
87. Duty to keep bunker delivery note and representative sample of fuel oil.....	62
88. Duties of local supplier of fuel oil.....	63
89. Offences and penalties	64
Part 7	
Powers of Government Surveyors	
90. Power to inspect bunker delivery notes, etc.	66
91. Power of Government surveyors to inspect, examine etc. ships.....	66
92. Obstruction and non-compliance with requirements	69
93. Offences and penalties	70
Part 8	
Powers of Director	
94. Director may appoint Government surveyors	71
95. Director may recognize organizations to survey ships and issue certificates etc.....	71
96. Director may request Convention countries to survey Hong Kong ships and issue or endorse certificates	72
97. Director may at request of Convention countries survey non-Hong Kong ships and issue or endorse certificates.....	72

Section	Page
98. Director may accept equivalents	73
99. Director may grant exemption	73
Part 9	
Miscellaneous	
100. Access to Annex VI and NO _x Technical Code	74

Merchant Shipping (Prevention of Air Pollution) Regulation

(Made by the Secretary for Transport and Housing under section 3 of the Merchant Shipping (Prevention and Control of Pollution) Ordinance (Cap. 413))

Part 1

Preliminary

1. Commencement

This Regulation comes into operation on 1 July 2016.

2. Interpretation

(1) In this Regulation—

Administration (主管機關), in relation to a ship, means the government of any place outside Hong Kong whose flag the ship is entitled to fly;

Annex VI (《附則 VI》) means Annex VI to the Convention, entitled “Regulations for the Prevention of Air Pollution from Ships”, as from time to time revised or amended by any revision or amendment that applies to Hong Kong;

anniversary date (周年日期), in relation to a specified Certificate that is in force in respect of a ship, means the day and month of each year which corresponds to the date of expiry of the Certificate;

Attained EEDI (達到的能效設計指數) means the value of the Energy Efficiency Design Index of a ship determined in accordance with Regulation 20 of Annex VI;

constructed (建造), in relation to a ship, means—

- (a) having the keel of the ship laid; or
- (b) being at a stage at which—
 - (i) construction identifiable with the ship begins; and
 - (ii) assembly of the ship has commenced comprising at least 50 tonnes or 1% of the estimated mass of all structural material, whichever is the less;

Convention (《公約》) means the International Convention for the Prevention of Pollution from Ships, 1973, including its protocols and appendices, and Annex VI (but no other Annex), as from time to time revised or amended by any revision or amendment to any provision of such Convention that applies to Hong Kong;

Convention country (公約國) means a country which is a party to the Convention;

conventional propulsion (常規推進) means a method of propulsion where a main reciprocating internal combustion engine is the prime mover and coupled to a propulsion shaft either directly or through a gear box;

cruise passenger ship (豪華郵輪) means a cruise passenger ship as defined in Regulation 2 of Annex VI;

existing ship (現有船舶) means a ship which is not a new ship;

fuel oil (燃油), in relation to a ship, means any fuel delivered on board the ship that is intended to be used for combustion purpose for the propulsion or operation of the ship, and includes gas fuel, distillate fuel and residual fuel;

gas fuelled engine (氣體燃料發動機) means a gas fuelled engine—

- (a) that is installed on a ship constructed on or after 1 March 2016;
- (b) that is added to a ship on or after 1 March 2016; or

- (c) that replaces a non-identical gas fuelled engine on or after 1 March 2016;

Government surveyor (政府驗船師) means a person appointed under section 94 to be a Government surveyor;

HKAPP Certificate (HKAPP 證書) means a certificate referred to in section 59 that is issued by the Director;

Hong Kong Air Pollution Prevention Certificate (香港防止空氣污染證書) means—

- (a) a HKAPP certificate; or
- (b) a Hong Kong Air Pollution Prevention Certificate issued by a recognized organization;

IAPP Certificate (IAPP 證書) means a certificate referred to in section 58 that is issued by the Director;

IEE Certificate (IEE 證書) means a certificate referred to in section 60 that is issued by the Director;

IMO means the International Maritime Organization;

International Air Pollution Prevention Certificate (國際防止空氣污染證書) means—

- (a) an IAPP Certificate;
- (b) an International Air Pollution Prevention Certificate issued by a recognized organization; or
- (c) an International Air Pollution Prevention Certificate issued by or under the authority of an Administration;

International Energy Efficiency Certificate (國際能效證書) means—

- (a) an IEE Certificate;
- (b) an International Energy Efficiency Certificate issued by a recognized organization; or

- (c) an International Energy Efficiency Certificate issued by or under the authority of an Administration;

international voyage (國際航程) means—

- (a) a voyage between Hong Kong and a port outside the People's Republic of China; or
- (b) a voyage between a port in a Convention country and a port outside that country (whether in another Convention country or not);

LNG carrier (LNG 運輸船) means a LNG carrier as defined in Regulation 2 of Annex VI;

local supplier (本地供應商) means a person who delivers fuel oil to a ship in Hong Kong;

major modification (重大改動), in relation to a ship, means a major conversion of the ship as defined in Regulation 2 of Annex VI;

modified existing ship (經改動現有船舶) means an existing ship that has undergone a major modification on or after 1 January 2013 which is so extensive that the ship is regarded by the Director as a newly constructed ship;

new ship (新船) means a ship—

- (a) for which the building contract is placed on or after 1 January 2013;
- (b) (if there is no building contract) which is constructed on or after 1 July 2013; or
- (c) the delivery of which is on or after 1 July 2015;

NO_x Technical Code (《氮氧化物技術規則》) means the Technical Code on Control of Emission of Nitrogen Oxides from Marine Diesel Engines adopted by IMO resolution MEPC.177(58) on 10 October 2008, as from time to time

revised or amended by any revision or amendment that applies to Hong Kong;

non-Chapter 4 ship (非第 4 章船舶) means—

- (a) a ship that is not propelled by mechanical means; or
- (b) a platform (including a floating production storage and offloading facility, a floating storage unit and a drilling rig);

non-conventional propulsion system (非常規推進系統) means a method of propulsion (other than conventional propulsion) and includes—

- (a) a diesel-electric propulsion system;
- (b) a turbine propulsion system; or
- (c) a hybrid propulsion system;

non-Hong Kong ship (非香港船舶) means a ship other than a Hong Kong ship;

non-international voyage (非國際航程) means—

- (a) a voyage that begins and ends within the waters of Hong Kong, during the course of which the ship concerned does not call at any port outside Hong Kong; or
- (b) a voyage between Hong Kong and any other port in the People's Republic of China, during the course of which the ship concerned does not call at any port outside the People's Republic of China;

ozone depleting substance (消耗臭氧物質) means any controlled substance defined in paragraph 4 of article 1 of the Montreal Protocol on Substances that Deplete the Ozone Layer, 1987, as listed in Annex A, B, C or E to the Protocol, as from time to time revised or amended by any revision or amendment that applies to Hong Kong;

post-2019 cruise passenger ship (2019 年後豪華郵輪) means a cruise passenger ship delivered on or after 1 September 2019;

post-2019 LNG carrier (2019 年後 LNG 運輸船) means a LNG carrier delivered on or after 1 September 2019;

recognized organization (認可機構) means an organization recognized by the Director under section 95;

regulated diesel engine (受規管柴油機) means any one of the following engines which has a power output of more than 130 kW, and includes a booster or compound system that is fitted to the engine—

- (a) a gas fuelled engine; or
 - (b) a reciprocating internal combustion engine operating on liquid or dual fuel,
- but does not include—
- (c) an engine which is intended to be used solely for emergencies;
 - (d) an engine which is solely to power any device or equipment intended to be used solely for emergencies on the ship on which it is installed; and
 - (e) an engine installed in a lifeboat intended to be used solely for emergencies;

Required EEDI (要求的能效設計指數) means the maximum value of the Attained EEDI that is allowed for a ship as determined in accordance with Regulation 21 of Annex VI;

special ship (特殊船舶) means—

- (a) a specified non-conventional propulsion ship; or
- (b) a cargo ship that has ice-breaking capability;

specified Certificate (指明證書) means an International Air Pollution Prevention Certificate or a Hong Kong Air Pollution Prevention Certificate;

specified non-conventional propulsion ship (指明非常規推進船舶) means a ship which has a non-conventional propulsion system except—

- (a) a post-2019 cruise passenger ship; or
 - (b) a post-2019 LNG carrier.
- (2) For the purposes of subsection (1), a cruise passenger ship or LNG carrier is delivered on or after 1 September 2019 if it is a cruise passenger ship or LNG carrier—
- (a) for which the building contract is placed on or after 1 September 2015;
 - (b) (if there is no building contract) which is constructed on or after 1 March 2016; or
 - (c) the delivery of which is on or after 1 September 2019.

3. Application

- (1) This Regulation applies to—
- (a) a Hong Kong ship wherever it may be; and
 - (b) a non-Hong Kong ship within the waters of Hong Kong.
- (2) This Regulation does not apply to—
- (a) a warship;
 - (b) a naval auxiliary; or
 - (c) any other ship owned or operated by a government and used only on government non-commercial service.

Part 2

Ships Engaged in International Voyages

Division 1—Application and Requirement for Certificates

4. Application of this Part

This Part applies to a ship engaged in international voyages.

5. Ships engaged in international voyages to have certain certificates

- (1) Subject to subsection (2), if a ship of 400 gross tonnage or above (other than a non-Chapter 4 ship) is engaged in an international voyage, there must be in force in respect of the ship the following certificates—
 - (a) an International Air Pollution Prevention Certificate; and
 - (b) an International Energy Efficiency Certificate.
- (2) Subsection (1)(b) does not apply to a ship before the completion of the earlier of the following surveys of the ship for endorsing or renewing an International Air Pollution Prevention Certificate—
 - (a) in relation to a Hong Kong ship—
 - (i) the first intermediate survey carried out in accordance with section 77 after the commencement of this Regulation; or
 - (ii) the first renewal survey carried out in accordance with section 76 after the commencement of this Regulation;
 - (b) in relation to a non-Hong Kong ship—

- (i) the first intermediate survey carried out by an Administration after the commencement of this Regulation; or
 - (ii) the first renewal survey carried out by an Administration after the commencement of this Regulation.
- (3) If a non-Chapter 4 ship of 400 gross tonnage or above is engaged in an international voyage, there must be in force in respect of the ship an International Air Pollution Prevention Certificate.

6. Exception to section 5

- (1) Section 5(1) does not prevent a ship from being engaged in an international voyage if there is in force in respect of the ship the following certificates or documents issued by or under the authority of an Administration—
 - (a) a certificate or document (other than an International Air Pollution Prevention Certificate) certifying or confirming that the ship is in compliance with Chapter 3 of Annex VI; and
 - (b) a certificate or document (other than an International Energy Efficiency Certificate) certifying or confirming that the ship is in compliance with Chapter 4 of Annex VI.
- (2) Section 5(3) does not prevent a non-Chapter 4 ship from being engaged in an international voyage if there is in force in respect of the ship a certificate or document (other than an International Air Pollution Prevention Certificate) issued by or under the authority of an Administration certifying or confirming that the ship is in compliance with Chapter 3 of Annex VI.

Division 2—Emission of Ozone Depleting Substances

7. Prohibition on emission of ozone depleting substances

- (1) A ship is not to be engaged in any deliberate emission of ozone depleting substances as referred to in Regulation 12 of Annex VI.
- (2) Subsection (1) does not apply to—
 - (a) an emission referred to in Regulation 3 of Annex VI; or
 - (b) any minimal releases associated with the recapture or recycling of an ozone depleting substance.

8. Installations containing ozone depleting substances prohibited

- (1) An installation which contains ozone depleting substances, including hydro-chlorofluorocarbons, is prohibited on a ship referred to in Regulation 12 of Annex VI.
- (2) In this section—

installation (裝置) means—

- (a) a system or equipment (including a portable fire-extinguishing unit), insulation or other material that contains ozone depleting substances (other than hydro-chlorofluorocarbons) which is installed on a ship but does not include—
 - (i) any repair or recharge of such system, equipment, insulation or other material which is installed before 19 May 2005;
 - (ii) any recharge of a portable fire-extinguishing unit which is installed before 19 May 2005; and
 - (iii) a permanently sealed equipment referred to in Regulation 12 of Annex VI; and

- (b) a system or equipment (including a portable fire-extinguishing unit), insulation or other material that contains hydro-chlorofluorocarbons but no other ozone depleting substances which is installed on a ship but does not include—
 - (i) any repair or recharge of such system, equipment, insulation or other material which is installed before 1 January 2020;
 - (ii) any recharge of a portable fire-extinguishing unit which is installed before 1 January 2020; and
 - (iii) a permanently sealed equipment referred to in Regulation 12 of Annex VI.

9. Delivery of ozone depleting substances to reception facilities

If any ozone depleting substances or an equipment containing such substances is removed from a ship, the substances and the equipment must be delivered to a reception facility recognized by the appropriate authority of a port.

10. Duty to maintain list of equipment containing ozone depleting substances

- (1) A list of the systems and equipment referred to in subsection (2) must be maintained for a ship of 400 gross tonnage or above and kept on board the ship.
- (2) The systems and equipment are all systems and equipment—
 - (a) which contain ozone depleting substances; and
 - (b) which are listed in the supplement to the International Air Pollution Prevention Certificate or the certificate or document referred to in section 6(1)(a) or (2) issued in respect of the ship.

11. Duty to maintain Record Book

- (1) If a ship is of 400 gross tonnage or above and has a rechargeable system that contains ozone depleting substances, an Ozone Depleting Substances Record Book must be maintained for the ship and kept on board the ship, and an entry referred to in section 12 must be made in the Record Book in the manner set out in section 12.
- (2) If the Record Book forms part of the electronic recording system of the ship, the system must be approved by—
 - (a) for a Hong Kong ship, the Director in accordance with the guidelines issued by IMO before the system is installed on the ship; or
 - (b) for a non-Hong Kong ship, an Administration in accordance with the guidelines issued by IMO.

12. Entries in Record Book

- (1) On the occurrence of any of the events set out in subsection (2), an entry of the event, in terms of mass (kg) of substance, must be made in the Record Book maintained for a ship referred to in section 11 without delay.
- (2) The events are as follows—
 - (a) the full or partial recharge, repair or maintenance of an equipment which contains ozone depleting substances;
 - (b) the discharge by the ship of any ozone depleting substances to the atmosphere (whether deliberate or not);
 - (c) the discharge by the ship of any ozone depleting substances to any land-based reception facilities; and
 - (d) the supply of any ozone depleting substances to the ship.

Division 3—Emission of Nitrogen Oxides

13. Application of this Division

The requirements in this Division do not apply to an emission referred to in Regulation 3 of Annex VI.

14. Diesel engines must operate within emission limit

A regulated diesel engine installed on a ship must not be put into operation unless the emission of nitrogen oxides from the engine is kept within the applicable emission limit set out in Regulation 13 of Annex VI.

15. Determination of emission

In determining whether the emission of nitrogen oxides from a regulated diesel engine is kept within an emission limit, the criteria and procedures as set out in the NO_x Technical Code are to be applied.

Division 4—Sulphur Content of Fuel Oil

16. Interpretation

In this Division—

SO_x Emission Control Area (硫氧化物排放控制區) means an area specified in Regulation 14 of Annex VI as an emission control area.

17. Sulphur content of fuel oil

- (1) The sulphur content of any fuel oil used on board a ship outside an SO_x Emission Control Area must not exceed the limit set out in Regulation 14.1 of Annex VI.

- (2) The sulphur content of any fuel oil used on board a ship within an SO_x Emission Control Area must not exceed the limit set out in Regulation 14.4 of Annex VI.

18. Change-over of fuel oil on entering or leaving SO_x Emission Control Area

- (1) This section applies to a Hong Kong ship—
- (a) which changes fuel oil of higher sulphur content to fuel oil of lower sulphur content before entering an SO_x Emission Control Area; or
- (b) which changes fuel oil of lower sulphur content to fuel oil of higher sulphur content after leaving an SO_x Emission Control Area.
- (2) Before a ship enters an SO_x Emission Control Area, sufficient time must be allowed for the fuel oil service system on the ship to be fully flushed of all fuel oil the sulphur content of which exceeds the limit set out in Regulation 14.4 of Annex VI.
- (3) The ship must keep on board a written procedure showing how the change-over of the fuel oil is to be done.
- (4) The ship must keep a record on board the ship showing the information referred to in subsection (5) at the following time—
- (a) in the case of subsection (1)(a), when the change-over of the fuel oil is completed before the ship enters an SO_x Emission Control Area; and
- (b) in the case of subsection (1)(b), when the change-over of the fuel oil is commenced after the ship leaves an SO_x Emission Control Area.
- (5) The information referred to in subsection (4) is—

- (a) the volume of the fuel oil the sulphur content of which is within the limit set out in Regulation 14.4 of Annex VI in each tank; and
- (b) the date, time and position of the ship.

Division 5—Volatile Organic Compounds

19. Interpretation

In this Division—

collection system (收集系統) means a system for the collection of volatile organic compounds approved by the Director in accordance with the safety standards issued by IMO;

designated port or terminal (指定港口或碼頭) means a port or terminal—

- (a) which is designated by a Convention country as a port or terminal at which emission of volatile organic compounds is to be regulated; and
- (b) for which a notification of the designation has been submitted to IMO pursuant to Regulation 15 of Annex VI;

gas carrier (氣體運輸船) means a cargo ship constructed or adapted for the carriage of any liquefied gas in bulk;

Hong Kong tanker (香港液貨船) means a tanker registered in Hong Kong;

tanker (液貨船) has the meaning given by Regulation 2 of Annex VI in relation to the control over the emission of volatile organic compounds.

20. Use of collection system

- (1) Subject to subsections (2) and (3), a Hong Kong tanker within a designated port or terminal must—

- (a) be equipped with a collection system; and
 - (b) use the system during the loading of the cargoes the types of which are specified in the notification of the designation of the port or the terminal submitted to IMO.
- (2) A tanker is not required to comply with subsection (1) within 3 years after the effective date specified in the notification if the operator of the port or the terminal allows the tanker to load the cargoes at the port or the terminal.
- (3) If a tanker is a gas carrier, subsection (1) only applies if the type of loading and containment systems of the tanker allow the safe retention of non-methane volatile organic compounds on board or the safe return of such compounds ashore.

21. Tanker carrying crude oil to have VOC Management Plan

A tanker carrying crude oil must have on board, and implement, a Volatile Organic Compounds Management Plan which is specific to the ship and which is approved by the Director or an Administration in accordance with the guidelines issued by IMO.

Division 6—Shipboard Incineration

22. Interpretation

In this Division—

approved incinerator (認可焚化爐) means a shipboard incinerator which belongs to a type of shipboard incinerator in respect of which a Type Approval Certificate has been issued;

post-2000 incinerator (2000 年後焚化爐) means a shipboard incinerator—

- (a) which is installed on a ship that is constructed on or after 1 January 2000; or
- (b) which is installed on a ship on or after 1 January 2000;

sewage sludge (污泥淤渣) means the sediment of sewage;

shipboard incineration (船上焚化) means the incineration on board a ship of waste, or other matter, which has been generated during the normal operation of the ship;

shipboard incinerator (船上焚化爐) means a shipboard facility designed for the primary purpose of incineration;

sludge oil (油類淤渣) means—

- (a) sludge from fuel or lubricating oil separators;
- (b) waste lubricating oil from main or auxiliary machinery; or
- (c) waste oil from bilge water separators, oil filtering equipment or drip trays;

Type Approval Certificate (型式認可證書) means a Certificate of Shipboard Incinerator issued by the Director or issued by or under the authority of an Administration certifying that a type of shipboard incinerator has been examined and tested in accordance with the standard specification issued by IMO.

23. Requirements on shipboard incineration for ships within waters of Hong Kong

- (1) Shipboard incineration must not take place on board a ship which is within the waters of Hong Kong unless the requirements set out in this section are complied with.
- (2) Subject to subsection (6), the incineration must be conducted in an approved incinerator.
- (3) If an approved incinerator is a post-2000 incinerator—
 - (a) it must operate within the limits set out in Appendix IV to Annex VI;
 - (b) the additional requirements in section 25 must be complied with;

- (c) an operating manual referred to in subsection (4) in relation to the incinerator must be kept on board the ship; and
 - (d) the operator of the incinerator must be trained in such a way as to be capable of implementing the guidance provided in the operating manual.
- (4) The operating manual is one—
- (a) which is issued by the manufacturer of the incinerator; and
 - (b) which provides guidance on how the incinerator may be operated within the limits set out in Appendix IV to Annex VI.
- (5) The substance for incineration must not be a substance which is listed in Regulation 16.2 of Annex VI.
- (6) If the substance for shipboard incineration is sewage sludge, or sludge oil, generated during the normal operation of the ship, the incineration may take place in the main or auxiliary power plant or boilers of the ship while it is not inside a port, harbour or estuary.

24. Requirements on shipboard incineration for Hong Kong ships outside waters of Hong Kong

- (1) Shipboard incineration must not take place on board a Hong Kong ship which is outside the waters of Hong Kong unless the requirements set out in this section are complied with.
- (2) Subject to subsections (6) and (7), the incineration must be conducted in a shipboard incinerator.
- (3) If a shipboard incinerator is a post-2000 incinerator—
 - (a) it must operate within the limits set out in Appendix IV to Annex VI;

- (b) the additional requirements in section 25 must be complied with;
 - (c) an operating manual referred to in subsection (4) in relation to the incinerator must be kept on board the ship; and
 - (d) the operator of the incinerator must be trained in such a way as to be capable of implementing the guidance provided in the operating manual.
- (4) The operating manual is one—
- (a) which is issued by the manufacturer of the incinerator; and
 - (b) which provides guidance on how the incinerator may be operated within the limits set out in Appendix IV to Annex VI.
- (5) The substance for incineration must not be a substance which is listed in Regulation 16.2 of Annex VI.
- (6) If the substance for shipboard incineration is polyvinyl chlorides, the incineration must be conducted in an approved incinerator.
- (7) If the substance for shipboard incineration is sewage sludge, or sludge oil, generated during the normal operation of the ship, the incineration may take place in the main or auxiliary power plant or boilers of the ship while it is not inside a port, harbour or estuary.

25. Additional requirements for post-2000 incinerators

- (1) This section applies to a post-2000 incinerator.
- (2) The temperature of the combustion chamber gas outlet of the incinerator during combustion is to be monitored at all times.

- (3) If the incinerator is a batch-loaded shipboard incinerator, it must not be put into operation unless by its design the following requirements are met—
- (a) the temperature of its combustion chamber gas outlet reaches 600°C within 5 minutes after it is started up; and
 - (b) the temperature stabilizes at not less than 850°C after 5 minutes.
- (4) If the incinerator is a continuous-feed shipboard incinerator, waste must not be fed into it when the combustion chamber gas outlet temperature is below 850°C.
- (5) In this section—
- (a) the incinerator is a batch-loaded shipboard incinerator if the loading of waste is carried out in separate batches as may be required; and
 - (b) the incinerator is a continuous-feed shipboard incinerator if the process during which waste is fed into the combustion chamber of the incinerator without human assistance is carried out while the incinerator is in normal operating conditions and the combustion chamber operative temperature is kept between 850°C and 1 200°C.

Division 7—Fuel Oil Quality

26. Application of this Division

This Division does not apply to a ship which uses—

- (a) coal in solid form; or
- (b) nuclear fuels.

27. Fuel oil quality

The quality of fuel oil used on board a ship must meet the requirements set out in Regulation 18 of Annex VI.

Division 8—Energy Efficiency Design Index

28. Application of this Division

- (1) This Division applies to a ship—
 - (a) which is of 400 gross tonnage or above; and
 - (b) which belongs to one of the categories of ship referred to in Regulation 20 of Annex VI.
- (2) This Division does not apply to—
 - (a) a non-Chapter 4 ship; or
 - (b) a special ship.

29. Attained Energy Efficiency Design Index

- (1) An Attained EEDI must be calculated for—
 - (a) a new ship before it is put into service;
 - (b) a new ship after it has undergone a major modification; and
 - (c) a modified existing ship after the major modification.
- (2) Where a ship belongs to a type of ship the reference line values and the reduction factors of which are set out in Annex VI, the Attained EEDI of the ship must be less than or equals to the Required EEDI of the ship calculated according to the reference line values and the reduction factors that are applicable to the ship as specified in Annex VI.

Division 9—Ship Energy Efficiency Management Plan

30. Ship Energy Efficiency Management Plan

- (1) Subject to subsection (3), a ship of 400 gross tonnage or above, other than a non-Chapter 4 ship, must keep on board a Ship Energy Efficiency Management Plan that complies with the requirement in subsection (2) in respect of the ship.
- (2) The plan must be prepared in accordance with the guidelines that is issued by IMO in relation to the development of a Ship Energy Efficiency Management Plan.
- (3) For an existing ship, the plan must be placed on board the ship no later than whichever is the earlier of the following—
 - (a) the date of the first intermediate survey of the ship after the commencement of this Regulation for the endorsement of the International Air Pollution Prevention Certificate issued in respect of the ship; or
 - (b) the date of the first renewal survey of the ship after the commencement of this Regulation for the issue of an International Air Pollution Prevention Certificate in respect of the ship.

Division 10—Offences

31. Offences and penalties

- (1) If any of the requirements in section 5(1) or (3), 7(1), 8(1), 9, 10(1), 11(1), 12(1), 14, 17(1) or (2), 18(2) or (3), 20(1), 21, 23(1), 24(1) or 30(1) is contravened in respect of a ship, the owner and the master of the ship each commits an offence.
- (2) If any of the requirements in section 11(2) or 29(1) or (2) is contravened in respect of a ship, the owner of the ship commits an offence.

- (3) If any of the requirements in section 18(4) is contravened in respect of a ship, the master of the ship commits an offence.
- (4) If section 27 is contravened in respect of a ship, the owner and the master of the ship each commits an offence.
- (5) A person who commits an offence under this section is liable—
 - (a) on conviction on indictment to a fine at level 6; or
 - (b) on summary conviction to a fine at level 3.
- (6) It is a defence for a person charged under subsection (1), (2) or (3) to show that the person had taken all reasonable steps to prevent the commission of the offence.
- (7) It is a defence for a person charged under subsection (4) to show that—
 - (a) the person had taken all reasonable steps to prevent the commission of the offence;
 - (b) fuel oil the quality of which meets the requirements referred to in section 27 was not available for purchase; and
 - (c) the person had notified the following authority of the fact set out in paragraph (b)—
 - (i) (if the ship concerned is a Hong Kong ship) the Director; and
 - (ii) the appropriate authority of the ship's next port of destination.
- (8) If an offence under this section is committed, or would, save for the operation of subsection (6) or (7), have been committed by the owner or the master of a ship due to the act or omission of some other person, that other person also commits the offence and may be charged with and convicted

of the offence whether or not proceedings are taken against the owner or the master.

Part 3

Ships Engaged in Non-international Voyages

Division 1—Application and Requirement for Certificates

32. Application of this Part

- (1) This Part applies to a ship engaged in non-international voyages.
- (2) This Part does not apply to a ship which is specified in section 10 of the Merchant Shipping (Local Vessels) Ordinance (Cap. 548).

33. Ships engaged in non-international voyages to have certain certificates

- (1) Subject to subsection (2), if a ship of 400 gross tonnage or above is engaged in a non-international voyage, there must be in force in respect of the ship an International Air Pollution Prevention Certificate or a Hong Kong Air Pollution Prevention Certificate.
- (2) Subsection (1) does not apply to a ship that is not self-propelled.

34. Exception to section 33

Section 33 does not prevent a ship from being engaged in a non-international voyage if there is in force in respect of the ship a certificate or document issued by or under the authority of an Administration the effect of which is recognized by the Director as equivalent to that of an International Air Pollution Prevention Certificate or a Hong Kong Air Pollution Prevention Certificate.

Division 2—Emission of Ozone Depleting Substances

35. Prohibition on emission of ozone depleting substances

- (1) A ship is not to be engaged in any deliberate emission of ozone depleting substances as referred to in Regulation 12 of Annex VI.
- (2) Subsection (1) does not apply to—
 - (a) an emission referred to in Regulation 3 of Annex VI; or
 - (b) any minimal releases associated with the recapture or recycling of an ozone depleting substance.

36. Installations containing ozone depleting substances prohibited

- (1) An installation which contains ozone depleting substances, including hydro-chlorofluorocarbons, is prohibited on a ship referred to in Regulation 12 of Annex VI.
- (2) In this section—

installation (裝置) means—

- (a) a system or equipment (including a portable fire-extinguishing unit), insulation or other material that contains ozone depleting substances (other than hydro-chlorofluorocarbons) which is installed on a ship but does not include—
 - (i) any repair or recharge of such system, equipment, insulation or other material which is installed before 19 May 2005;
 - (ii) any recharge of a portable fire-extinguishing unit which is installed before 19 May 2005; and
 - (iii) a permanently sealed equipment referred to in Regulation 12 of Annex VI; and

- (b) a system or equipment (including a portable fire-extinguishing unit), insulation or other material that contains hydro-chlorofluorocarbons but no other ozone depleting substances which is installed on a ship but does not include—
 - (i) any repair or recharge of such system, equipment, insulation or other material which is installed before 1 January 2020;
 - (ii) any recharge of a portable fire-extinguishing unit which is installed before 1 January 2020; and
 - (iii) a permanently sealed equipment referred to in Regulation 12 of Annex VI.

37. Delivery of ozone depleting substances to reception facilities

If any ozone depleting substances or an equipment containing such substances is removed from a ship, the substances and the equipment must be delivered to a reception facility recognized by the appropriate authority of a port.

38. Duty to maintain list of equipment containing ozone depleting substances

- (1) A list of the systems and equipment referred to in subsection (2) must be maintained for a ship of 400 gross tonnage or above and kept on board the ship.
- (2) The systems and equipment are all systems and equipment—
 - (a) which contain ozone depleting substances; and
 - (b) which are listed in the supplement to the Hong Kong Air Pollution Prevention Certificate, the International Air Pollution Prevention Certificate or the certificate or document referred to in section 34 issued in respect of the ship.

39. Duty to maintain Record Book

- (1) If a ship is of 400 gross tonnage or above and has a rechargeable system that contains ozone depleting substances, an Ozone Depleting Substances Record Book must be maintained for the ship and kept on board the ship, and an entry referred to in section 40 must be made in the Record Book in the manner set out in section 40.
- (2) If the Record Book forms part of the electronic recording system of the ship, the system must be approved by—
 - (a) for a Hong Kong ship, the Director in accordance with the guidelines issued by IMO before the system is installed on the ship; or
 - (b) for a non-Hong Kong ship, an Administration in accordance with the guidelines issued by IMO.

40. Entries in Record Book

- (1) On the occurrence of any of the events set out in subsection (2), an entry of the event, in terms of mass (kg) of substance, must be made in the Record Book maintained for a ship referred to in section 39 without delay.
- (2) The events are as follows—
 - (a) the full or partial recharge, repair or maintenance of an equipment which contains ozone depleting substances;
 - (b) the discharge by the ship of any ozone depleting substances to the atmosphere (whether deliberate or not);
 - (c) the discharge by the ship of any ozone depleting substances to any land-based reception facilities; and
 - (d) the supply of any ozone depleting substances to the ship.

Division 3—Emission of Nitrogen Oxides**41. Application of this Division and interpretation**

- (1) This Division does not apply to—
 - (a) a regulated diesel engine installed on a ship that is constructed before 1 June 2008; or
 - (b) a regulated diesel engine that is subject to an alternative nitrogen oxide control measure which is accepted by the Director.
- (2) The regulated diesel engine referred to in subsection (1)(a) does not include a regulated diesel engine that has undergone a major conversion on or after 1 June 2008.
- (3) The requirements in this Division do not apply to an emission referred to in Regulation 3 of Annex VI.
- (4) In this Division—

g/kWh means gram per kilowatt-hour;

major conversion (重大改裝), in relation to a regulated diesel engine that has not been certified to meet the NO_x emission standards set out in Regulation 13 of Annex VI, means—

- (a) a replacement of the engine by another regulated diesel engine;
- (b) the installation of an additional regulated diesel engine;
- (c) a substantial modification, as defined in the NO_x Technical Code, is made to the engine; or
- (d) a modification of the engine by which the maximum continuous rating of the engine is increased by more than 10%, as compared to the maximum continuous rating of the engine before the modification;

n means rated engine speed (crankshaft revolutions per minute);

rpm means revolutions per minute.

42. Diesel engines installed on ships constructed on or after commencement of this Regulation and certain other diesel engines must operate within emission limits

- (1) This section applies to a regulated diesel engine—
 - (a) installed on a ship that is constructed on or after the commencement of this Regulation;
 - (b) which on or after the commencement of this Regulation—
 - (i) replaces a non-identical regulated diesel engine installed on a ship; or
 - (ii) is installed on a ship as an additional regulated diesel engine; or
 - (c) which is installed on a ship constructed on or after 1 January 2011 and which on or after the commencement of this Regulation has undergone—
 - (i) a substantial modification as defined in the NO_x Technical Code; or
 - (ii) a modification by which the maximum continuous rating of the engine is increased by more than 10%, as compared to the maximum continuous rating of the engine before the modification.
- (2) If a regulated diesel engine referred to in subsection (1) is replaced by an identical regulated diesel engine on or after the commencement of this Regulation, the identical engine is to be regarded as the engine that it has replaced.
- (3) A regulated diesel engine must not be put into operation unless the emission of nitrogen oxides from the engine is kept within the following limits—
 - (a) 14.4 g/kWh when n is less than 130 rpm;

- (b) $44 \cdot n^{(-0.23)}$ g/kWh when n is 130 rpm or more but less than 2 000 rpm; or
- (c) 7.7 g/kWh when n is 2 000 rpm or more.

43. Diesel engines installed on ships constructed before commencement of this Regulation and certain other diesel engines must operate within emission limits

- (1) This section applies to a regulated diesel engine—
 - (a) installed on a ship that is constructed on or after 1 June 2008 but before the commencement of this Regulation;
 - (b) which has undergone a major conversion on or after 1 June 2008 but before the commencement of this Regulation and is—
 - (i) a replacement of a non-identical regulated diesel engine installed on a ship constructed before the commencement of this Regulation; or
 - (ii) an additional regulated diesel engine installed on a ship constructed before 1 June 2008; or
 - (c) which is installed on a ship constructed before 1 January 2011 and which on or after the commencement of this Regulation has undergone—
 - (i) a substantial modification as defined in the NO_x Technical Code; or
 - (ii) a modification by which the maximum continuous rating of the engine is increased by more than 10%, as compared to the maximum continuous rating of the engine before the modification.
- (2) If a regulated diesel engine referred to in subsection (1) is replaced by an identical regulated diesel engine on or after 1 June 2008, the identical engine is to be regarded as the engine that it has replaced.

- (3) A regulated diesel engine must not be put into operation unless the emission of nitrogen oxides from the engine is kept within the following limits—
- (a) 17.0 g/kWh when n is less than 130 rpm;
 - (b) $45 \cdot n^{(-0.2)}$ g/kWh when n is 130 rpm or more but less than 2 000 rpm; or
 - (c) 9.8 g/kWh when n is 2 000 rpm or more.

44. Emission limits in section 42 to prevail

If a regulated diesel engine is an engine to which both sections 42 and 43 apply, the engine must not be put into operation unless the emission of nitrogen oxides from the engine is kept within the limit set out in section 42(3).

45. Determination of emission

In determining whether the emission of nitrogen oxides from a regulated diesel engine is kept within a limit which is set out in this Division, the criteria and procedures as set out in the NO_x Technical Code are to be applied.

Division 4—Sulphur Content of Fuel Oil

46. Sulphur content of fuel oil

- (1) On or after the commencement of this Regulation but before 1 January 2020, the sulphur content of any fuel oil used on board a ship must not exceed 3.50% mass per mass.
- (2) On or after 1 January 2020, the sulphur content of any fuel oil used on board a ship must not exceed 0.50% mass per mass.

Division 5—Volatile Organic Compounds

47. Interpretation

In this Division—

collection system (收集系統) means a system for the collection of volatile organic compounds approved by the Director in accordance with the safety standards issued by IMO;

designated port or terminal (指定港口或碼頭) means a port or terminal—

- (a) which is designated by a Convention country as a port or terminal at which emission of volatile organic compounds is to be regulated; and
- (b) for which a notification of the designation has been submitted to IMO pursuant to Regulation 15 of Annex VI;

gas carrier (氣體運輸船) means a cargo ship constructed or adapted for the carriage of any liquefied gas in bulk;

Hong Kong tanker (香港液貨船) means a Hong Kong ship which is a tanker;

tanker (液貨船) has the meaning given by Regulation 2 of Annex VI in relation to the control over the emission of volatile organic compounds.

48. Use of collection system

- (1) Subject to subsections (2) and (3), a Hong Kong tanker within a designated port or terminal must—
 - (a) be equipped with a collection system; and
 - (b) use the system during the loading of the cargoes the types of which are specified in the notification of the designation of the port or the terminal submitted to IMO.

- (2) A tanker is not required to comply with subsection (1) within 3 years after the effective date specified in the notification if the operator of the port or the terminal allows the tanker to load the cargoes at the port or the terminal.
- (3) If a tanker is a gas carrier, subsection (1) only applies if the type of loading and containment systems of the tanker allow the safe retention of non-methane volatile organic compounds on board or the safe return of such compounds ashore.

49. Tanker carrying crude oil to have VOC Management Plan

A tanker carrying crude oil must have on board, and implement, a Volatile Organic Compounds Management Plan which is specific to the ship and which is approved by the Director or an Administration in accordance with the guidelines issued by IMO.

Division 6—Shipboard Incineration

50. Interpretation

In this Division—

approved incinerator (認可焚化爐) means a shipboard incinerator which belongs to a type of shipboard incinerator in respect of which a Type Approval Certificate has been issued;

post-2000 incinerator (2000 年後焚化爐) means a shipboard incinerator—

- (a) which is installed on a ship that is constructed on or after 1 January 2000; or
- (b) which is installed on a ship on or after 1 January 2000;

sewage sludge (污泥淤渣) means the sediment of sewage;

shipboard incineration (船上焚化) means the incineration on board a ship of waste, or other matter, which has been generated during the normal operation of the ship;

shipboard incinerator (船上焚化爐) means a shipboard facility designed for the primary purpose of incineration;

sludge oil (油類淤渣) means—

- (a) sludge from fuel or lubricating oil separators;
- (b) waste lubricating oil from main or auxiliary machinery; or
- (c) waste oil from bilge water separators, oil filtering equipment or drip trays;

Type Approval Certificate (型式認可證書) means a Certificate of Shipboard Incinerator issued by the Director or issued by or under the authority of an Administration certifying that a type of shipboard incinerator has been examined and tested in accordance with the standard specification issued by IMO.

51. Requirements on shipboard incineration for ships within waters of Hong Kong

- (1) Shipboard incineration must not take place on board a ship which is within the waters of Hong Kong unless the requirements set out in this section are complied with.
- (2) Subject to subsection (6), the incineration must be conducted in an approved incinerator.
- (3) If an approved incinerator is a post-2000 incinerator—
 - (a) it must operate within the limits set out in Appendix IV to Annex VI;
 - (b) the additional requirements in section 53 must be complied with;
 - (c) an operating manual referred to in subsection (4) in relation to the incinerator must be kept on board the ship; and

- (d) the operator of the incinerator must be trained in such a way as to be capable of implementing the guidance provided in the operating manual.
- (4) The operating manual is one—
 - (a) which is issued by the manufacturer of the incinerator; and
 - (b) which provides guidance on how the incinerator may be operated within the limits set out in Appendix IV to Annex VI.
- (5) The substance for incineration must not be a substance which is listed in Regulation 16.2 of Annex VI.
- (6) If the substance for shipboard incineration is sewage sludge, or sludge oil, generated during the normal operation of the ship, the incineration may take place in the main or auxiliary power plant or boilers of the ship while it is not inside a port, harbour or estuary.

52. Requirements on shipboard incineration for Hong Kong ships outside waters of Hong Kong

- (1) Shipboard incineration must not take place on board a Hong Kong ship which is outside the waters of Hong Kong unless the requirements set out in this section are complied with.
- (2) Subject to subsections (6) and (7), the incineration must be conducted in a shipboard incinerator.
- (3) If a shipboard incinerator is a post-2000 incinerator—
 - (a) it must operate within the limits set out in Appendix IV to Annex VI;
 - (b) the additional requirements in section 53 must be complied with;

- (c) an operating manual referred to in subsection (4) in relation to the incinerator must be kept on board the ship; and
- (d) the operator of the incinerator must be trained in such a way as to be capable of implementing the guidance provided in the operating manual.
- (4) The operating manual is one—
 - (a) which is issued by the manufacturer of the incinerator; and
 - (b) which provides guidance on how the incinerator may be operated within the limits set out in Appendix IV to Annex VI.
- (5) The substance for incineration must not be a substance which is listed in Regulation 16.2 of Annex VI.
- (6) If the substance for shipboard incineration is polyvinyl chlorides, the incineration must be conducted in an approved incinerator.
- (7) If the substance for shipboard incineration is sewage sludge, or sludge oil, generated during the normal operation of the ship, the incineration may take place in the main or auxiliary power plant or boilers of the ship while it is not inside a port, harbour or estuary.

53. Additional requirements for post-2000 incinerators

- (1) This section applies to a post-2000 incinerator.
- (2) The temperature of the combustion chamber gas outlet of the incinerator during combustion is to be monitored at all times.
- (3) If the incinerator is a batch-loaded shipboard incinerator, it must not be put into operation unless by its design the following requirements are met—

- (a) the temperature of its combustion chamber gas outlet reaches 600°C within 5 minutes after it is started up; and
 - (b) the temperature stabilizes at not less than 850°C after 5 minutes.
- (4) If the incinerator is a continuous-feed shipboard incinerator, waste must not be fed into it when the combustion chamber gas outlet temperature is below 850°C.
- (5) In this section—
- (a) the incinerator is a batch-loaded shipboard incinerator if the loading of waste is carried out in separate batches as may be required; and
 - (b) the incinerator is a continuous-feed shipboard incinerator if the process during which waste is fed into the combustion chamber of the incinerator without human assistance is carried out while the incinerator is in normal operating conditions and the combustion chamber operative temperature is kept between 850°C and 1 200°C.

Division 7—Fuel Oil Quality

54. Application of this Division

This Division does not apply to a ship which uses—

- (a) coal in solid form; or
- (b) nuclear fuels.

55. Fuel oil quality

The quality of fuel oil used on board a ship must meet the requirements set out in Regulation 18 of Annex VI.

Division 8—Offences

56. Offences and penalties

- (1) If any of the requirements in section 33(1), 35(1), 36(1), 37, 38(1), 39(1), 40(1), 42(3), 43(3), 46(1) or (2), 48(1), 49, 51(1) or 52(1) is contravened in respect of a ship, the owner and the master of the ship each commits an offence.
- (2) If any of the requirements in section 39(2) is contravened in respect of a ship, the owner of the ship commits an offence.
- (3) If section 55 is contravened in respect of a ship, the owner and the master of the ship each commits an offence.
- (4) A person who commits an offence under this section is liable—
 - (a) on indictment to a fine at level 6; or
 - (b) on summary conviction to a fine at level 3.
- (5) It is a defence for a person charged under subsection (1) or (2) to show that the person had taken all reasonable steps to prevent the commission of the offence.
- (6) It is a defence for a person charged under subsection (3) to show that—
 - (a) the person had taken all reasonable steps to prevent the commission of the offence;
 - (b) fuel oil the quality of which meets the requirements referred to in section 55 was not available for purchase; and
 - (c) the person had notified the following authority of the fact set out in paragraph (b)—
 - (i) (if the ship concerned is a Hong Kong ship) the Director; and

- (ii) the appropriate authority of the ship's next port of destination.
- (7) If an offence under this section is committed, or would, save for the operation of subsection (5) or (6), have been committed by the owner or the master of a ship due to the act or omission of some other person, that other person also commits the offence and may be charged with and convicted of the offence whether or not proceedings are taken against the owner or the master.
-

Part 4

IAPP Certificates, HKAPP Certificates and IEE Certificates

Division 1—Application

57. Application of this Part

This Part applies to a Hong Kong ship of 400 gross tonnage or above.

Division 2—Issue of Certificates

58. Issue of IAPP Certificates

- (1) An owner of a ship may apply to the Director for an IAPP Certificate in respect of the ship.
- (2) The application must be accompanied by the prescribed fee for the Certificate.
- (3) The Director must not issue an IAPP Certificate in respect of the ship unless the Director is satisfied—
 - (a) that—
 - (i) where an IAPP Certificate has never been issued in respect of the ship, an initial survey of the ship has been carried out in accordance with section 75; or
 - (ii) where an IAPP Certificate has been issued in respect of the ship, a renewal survey of the ship has been carried out in accordance with section 76; and
 - (b) that, on evidence of a declaration of survey forwarded to the Director under section 75 or 76, the equipment, systems, fittings, arrangements and material of the ship

comply with the requirements under Chapter 3 of Annex VI.

59. Issue of HKAPP Certificates

- (1) An owner of a ship may apply to the Director for a HKAPP Certificate in respect of the ship.
- (2) The application must be accompanied by the prescribed fee for the Certificate.
- (3) The Director must not issue a HKAPP Certificate in respect of the ship unless the Director is satisfied—
 - (a) that—
 - (i) where a HKAPP Certificate has never been issued in respect of the ship, an initial survey of the ship has been carried out in accordance with section 75; or
 - (ii) where a HKAPP Certificate has been issued in respect of the ship, a renewal survey of the ship has been carried out in accordance with section 76; and
 - (b) that, on evidence of a declaration of survey forwarded to the Director under section 75 or 76, the equipment, systems, fittings, arrangements and material of the ship comply with the requirements under Part 3.

60. Issue of IEE Certificates

- (1) An owner of a ship may apply to the Director for an IEE Certificate in respect of the ship.
- (2) The application must be accompanied by the prescribed fee for the Certificate.
- (3) The Director must not issue an IEE Certificate in respect of the ship unless—

- (a) in relation to an existing ship (other than a modified existing ship) or a special ship, the conditions set out in subsection (4) are complied with; or
 - (b) in relation to any other ship, the conditions set out in subsection (5) are complied with.
- (4) For the purposes of subsection (3)(a), the conditions are—
 - (a) the Director is satisfied that an initial survey of the ship has been carried out in accordance with section 81; and
 - (b) the Director is satisfied that on evidence of a declaration of survey forwarded to the Director under section 81, the Government surveyor concerned is satisfied that a Ship Energy Efficiency Management Plan referred to in section 30 in respect of the ship is placed on board the ship.
 - (5) For the purposes of subsection (3)(b), the conditions are—
 - (a) where the ship concerned is a ship that has undergone a major modification and the Director has directed that an initial survey of the ship under section 81 is to be carried out, or a new ship which has not undergone any major modification—
 - (i) the Director is satisfied that the initial survey has been carried out in accordance with section 81; and
 - (ii) the Director is satisfied that on evidence of a declaration of survey forwarded to the Director under section 81, the Government surveyor concerned is satisfied as to the matters set out in section 81(3)(b) in relation to the ship;
 - (b) where the ship concerned is a new ship that has undergone a major modification and the Director has directed that an additional survey of the ship under section 82 is to be carried out—

- (i) the Director is satisfied that the additional survey has been carried out in accordance with section 82; and
- (ii) the Director is satisfied that on evidence of a declaration of survey forwarded to the Director under section 82, the Government surveyor concerned is satisfied as to the matters set out in section 82(3) in relation to the ship.

Division 3—Withdrawal and Cancellation of Certificates

61. Withdrawal of Certificates

- (1) A Government surveyor may, by written notice, require the owner or the master of a Hong Kong ship in respect of which a specified Certificate or an International Energy Efficiency Certificate has been issued to take such corrective action which the surveyor considers necessary if on a survey (other than an initial survey) of the ship under Part 5, the surveyor determines that the condition of the ship or its equipment does not correspond substantially with the particulars in the Certificate concerned.
- (2) The surveyor must, on giving notice under subsection (1), inform the Director.
- (3) If the corrective action is not taken within the period specified by the surveyor, the surveyor must inform the Director and the Director may, by written notice to the owner and the master of the ship, withdraw the Certificate concerned.
- (4) On receiving a notice under subsection (3), the owner and the master of the ship must deliver the Certificate concerned to the Director immediately.

- (5) The owner or the master of the ship may, after the corrective action in respect of the ship has been taken, apply to the Director for the return of the Certificate concerned.
- (6) On receiving an application under subsection (5), if the Director is satisfied that the corrective action in respect of the ship has been taken, the Director must, by written notice to the owner or the master, return the Certificate concerned to the owner or the master.

62. Cancellation of Certificates

- (1) The Director may, by written notice to the owner and the master of a Hong Kong ship cancel any of the following certificates issued in respect of the ship in the circumstances set out in subsection (2)—
 - (a) an International Air Pollution Prevention Certificate;
 - (b) a Hong Kong Air Pollution Prevention Certificate;
 - (c) an International Energy Efficiency Certificate.
- (2) The circumstances are that the Director has reasonable grounds to believe that the Certificate concerned was issued, or any endorsement on it was made, on the basis of false or erroneous information.
- (3) The Director must give reasons for cancelling the Certificate concerned in the notice under subsection (1).
- (4) On receiving a notice under subsection (1), the owner and the master of the ship must deliver the Certificate concerned to the Director immediately.

63. Offences and penalties

- (1) If section 61(4) is contravened, the owner and the master of the ship concerned each commits an offence and is liable—
 - (a) on conviction on indictment to a fine at level 6; or

- (b) on summary conviction to a fine at level 3.
- (2) It is a defence for a person charged under subsection (1) to show that the person had taken all reasonable steps to prevent the commission of the offence.
- (3) If an offence under subsection (1) is committed, or would, save for the operation of subsection (2), have been committed by the owner or the master of a ship due to the act or omission of some other person, that other person also commits the offence and may be charged with and convicted of the offence whether or not proceedings are taken against the owner or the master.

Division 4—Duration of Certificates

64. Duration of Certificates

- (1) Subject to the provisions of this Division and Division 5—
 - (a) an International Air Pollution Prevention Certificate issued in respect of a ship as a result of an initial survey referred to in section 75 is valid for such period as may be specified by the Director in the Certificate;
 - (b) a Hong Kong Air Pollution Prevention Certificate issued in respect of a ship as a result of an initial survey referred to in section 75 is valid for such period as may be specified by the Director in the Certificate; and
 - (c) an International Energy Efficiency Certificate issued in respect of a ship as a result of an initial survey referred to in section 81 is valid for the life of the ship.
- (2) The period specified by the Director in an International Air Pollution Prevention Certificate or a Hong Kong Air Pollution Prevention Certificate issued in respect of a ship must not exceed 5 years beginning on the date of completion of the initial survey of the ship.

- (3) For the purposes of this Division, a Hong Kong Air Pollution Prevention Certificate issued in respect of a ship is to be regarded as an International Air Pollution Prevention Certificate referred to in Regulation 9 of Annex VI.

65. Duration of specified Certificates issued after renewal surveys

A new specified Certificate issued in respect of a ship as a result of a renewal survey referred to in section 76 is valid for such period as may be specified by the Director in the Certificate in accordance with Regulation 9 of Annex VI.

66. Duration of specified Certificates after early completion of surveys

- (1) This section applies if—
 - (a) an intermediate survey of a ship is completed before the period within which the survey is required under section 77 to be completed; or
 - (b) an annual survey of a ship is completed before the period within which the survey is required under section 78 to be completed.
- (2) For the purposes of sections 77 and 78, the anniversary date ascertained from the existing specified Certificate issued in respect of the ship is to be replaced by the anniversary date that is ascertained from the date shown on the endorsement made to the Certificate, and the date shown is to be a date within 3 months from the date of completion of the survey concerned.
- (3) Any subsequent intermediate or annual survey required by section 77 or 78 in respect of the ship is to be completed within the period provided under section 77 or 78 (as the case may be) by reference to the new anniversary date ascertained under subsection (2).

- (4) The duration of the existing specified Certificate issued in respect of the ship may be varied by the Director in accordance with Regulation 9 of Annex VI.

67. Extension of validity period of specified Certificates in certain circumstances

The Director may extend the validity period of an existing specified Certificate issued in respect of a ship in accordance with Regulation 9 of Annex VI if—

- (a) the Certificate is valid for a period of less than 5 years;
- (b) the new specified Certificate cannot be issued or placed on board the ship before the expiry of the Certificate;
- (c) the ship is not in the port in which it is to be surveyed when the Certificate expires; or
- (d) the ship is engaged in short voyages.

Division 5—Cessation of Certificates

68. Specified Certificates cease to be valid

A specified Certificate issued in respect of a Hong Kong ship ceases to be valid if—

- (a) a survey referred to in Division 2 of Part 5 is not carried out in relation to the ship before the expiry of the period specified for the survey in that Division;
- (b) the Certificate is not endorsed under section 77 after an intermediate survey of the ship is carried out;
- (c) the Certificate is not endorsed under section 78 after an annual survey of the ship is carried out; or
- (d) the ship is transferred to the registry of a place outside Hong Kong.

69. International Energy Efficiency Certificates cease to be valid

An International Energy Efficiency Certificate issued in respect of a Hong Kong ship ceases to be valid if—

- (a) the ship is withdrawn from service and a notice to that effect has been given to the Director by the owner or the master of the ship;
- (b) (where the ship has undergone a major modification) a new International Energy Efficiency Certificate is issued in respect of the ship after the major modification; or
- (c) the ship is transferred to the registry of a place outside Hong Kong.

Division 6—Form, Alteration and Certified True Copies of Certificates

70. Form of Certificates

The Director may specify the form of a specified Certificate or an International Energy Efficiency Certificate.

71. Alteration of Certificates

- (1) The owner of a ship in respect of which an IAPP Certificate, a HKAPP Certificate or an IEE Certificate has been issued may request the Director to alter any of the particulars contained in the Certificate concerned.
- (2) The Director may refuse to make the alteration if the Director considers it to be a material alteration.
- (3) If the Director agrees to make the alteration, the Director must, on payment of the prescribed fee, alter the Certificate.

72. Certified true copies of Certificates

- (1) The owner of a ship in respect of which an IAPP Certificate, a HKAPP Certificate or an IEE Certificate has been issued may apply to the Director for the issue of a certified true copy of the Certificate concerned.
- (2) The application must be accompanied by the prescribed fee for the certified true copy.

Division 7—Saving

73. Certificates issued under repealed Regulation to be regarded as Certificates issued under this Regulation

- (1) An International Air Pollution Prevention Certificate issued under the repealed Regulation and in force immediately before the commencement of this Regulation is to be regarded as an International Air Pollution Prevention Certificate issued under this Regulation.
- (2) A Hong Kong Air Pollution Prevention Certificate issued under the repealed Regulation and in force immediately before the commencement of this Regulation is to be regarded as a Hong Kong Air Pollution Prevention Certificate issued under this Regulation.
- (3) In this section—

repealed Regulation (《已廢除規例》) means the Merchant Shipping (Prevention of Air Pollution) Regulation (Cap. 413 sub. leg. M) repealed by the Merchant Shipping (Prevention of Air Pollution) Regulation (Repeal) Regulation.

Part 5

Surveys

Division 1—Application

74. Application of this Part

This Part applies to a Hong Kong ship of 400 gross tonnage or above.

Division 2—Surveys in relation to Specified Certificates

75. Initial surveys

- (1) An initial survey of a ship is to be carried out by a Government surveyor—
 - (a) before the ship is put into service; or
 - (b) before a specified Certificate is issued for the first time in respect of the ship.
- (2) If, after having carried out an initial survey of the ship, the surveyor is satisfied that the equipment, systems, fittings, arrangements and material of the ship comply with the applicable requirements, the surveyor must make a declaration of survey to that effect and forward the declaration to the Director.
- (3) If the ship is installed with a regulated diesel engine to which Division 3 of Part 2, or Division 3 of Part 3, applies, the initial survey of the ship, in so far as it relates to the engine, is to be conducted in accordance with the NO_x Technical Code.
- (4) In this section—
applicable requirements (適用規定) means—

- (a) in relation to an initial survey referred to in section 58, the requirements under Chapter 3 of Annex VI; and
- (b) in relation to an initial survey referred to in section 59, the requirements under Part 3.

76. Renewal surveys

- (1) Subject to subsection (2), a renewal survey of a ship is to be carried out by a Government surveyor within 5 years—
 - (a) from the date of completion of the initial survey of the ship; or
 - (b) if a renewal survey of the ship has been carried out, from the date of completion of the preceding renewal survey.
- (2) Where the validity of the specified Certificate issued in respect of the ship has been extended under section 67(c) or (d), the period of 5 years referred to in subsection (1) is to be extended by the period for which the Certificate is extended.
- (3) If, after having carried out a renewal survey of the ship, the surveyor is satisfied that the equipment, systems, fittings, arrangements and material of the ship comply with the applicable requirements, the surveyor must make a declaration of survey to that effect and forward the declaration to the Director.
- (4) If the ship is installed with a regulated diesel engine to which Division 3 of Part 2, or Division 3 of Part 3, applies, the renewal survey of the ship, in so far as it relates to the engine, is to be conducted in accordance with the NO_x Technical Code.
- (5) In this section—
applicable requirements (適用規定) means—
 - (a) in relation to a renewal survey referred to in section 58, the requirements under Chapter 3 of Annex VI; and

- (b) in relation to a renewal survey referred to in section 59, the requirements under Part 3.

77. Intermediate surveys

- (1) An intermediate survey of a ship is to be carried out by a Government surveyor—
 - (a) within the period commencing 3 months before and ending 3 months after the second anniversary date of the specified Certificate issued in respect of the ship; or
 - (b) within the period commencing 3 months before and ending 3 months after the third anniversary date of the specified Certificate issued in respect of the ship.
- (2) If, after having carried out an intermediate survey of the ship, the surveyor is satisfied that the equipment and arrangements of the ship—
 - (a) comply with the applicable requirements; and
 - (b) are in good working order,the surveyor must make an endorsement to that effect on the Certificate.
- (3) If the ship is installed with a regulated diesel engine to which Division 3 of Part 2, or Division 3 of Part 3, applies, the intermediate survey of the ship, in so far as it relates to the engine, is to be conducted in accordance with the NO_x Technical Code.
- (4) In this section—
applicable requirements (適用規定) means—
 - (a) for a ship in respect of which an International Air Pollution Prevention Certificate is in force, the requirements under Chapter 3 of Annex VI; and

- (b) for a ship in respect of which a Hong Kong Air Pollution Prevention Certificate is in force, the requirements under Part 3.

78. Annual surveys

- (1) Subject to subsection (2), an annual survey of a ship is to be carried out by a Government surveyor within the period commencing 3 months before and ending 3 months after each anniversary date of the specified Certificate issued in respect of the ship.
- (2) If an intermediate survey of the ship has been carried out under section 77 by reference to an anniversary date, the annual survey of the ship by reference to the anniversary date for the relevant year is not required to be carried out.
- (3) An annual survey of the ship must include a general inspection of the equipment, systems, fittings, arrangements and material of the ship.
- (4) If, after having carried out an annual survey of the ship, the surveyor is satisfied that the equipment, systems, fittings, arrangements and material of the ship—
 - (a) have been maintained in accordance with the applicable requirements; and
 - (b) remain satisfactory for the service for which the ship is intended,the surveyor must make an endorsement to that effect on the Certificate.
- (5) If the ship is installed with a regulated diesel engine to which Division 3 of Part 2, or Division 3 of Part 3, applies, the annual survey of the ship, in so far as it relates to the engine, is to be conducted in accordance with the NO_x Technical Code.

- (6) In this section—

applicable requirements (適用規定) means—

- (a) for a ship in respect of which an International Air Pollution Prevention Certificate is in force, the requirements under Chapter 3 of Annex VI; and
- (b) for a ship in respect of which a Hong Kong Air Pollution Prevention Certificate is in force, the requirements under Part 3.

79. Additional surveys

- (1) The Director may, by written notice to the owner and the master of a ship, require an additional survey of the ship to be carried out by a Government surveyor within a reasonable period specified by the Director.
- (2) The Director may only exercise the power under subsection (1) if—
 - (a) after a specified Certificate has been issued in respect of the ship, alterations have been made to the equipment, systems, fittings, arrangements or material covered by the survey leading to the issue of the Certificate;
 - (b) the Director has reasonable grounds to believe that important repairs or renewals have been made to the ship after a specified Certificate has been issued;
 - (c) the Director has reasonable grounds to believe that section 83 is not complied with in respect of the ship; or
 - (d) the Director determines on the basis of an investigation under section 86 that the survey is necessary.
- (3) On receiving a notice under subsection (1), the owner and the master of the ship must cause an additional survey to be carried out.

- (4) The additional survey may be general or partial as the Director thinks fit.
- (5) If, after having carried out an additional survey of the ship, the surveyor is satisfied that—
 - (a) the equipment, systems, fittings, arrangements and material of the ship which are the subject matter of the survey comply with the applicable requirements; and
 - (b) where repairs or renewals have been made to the ship—
 - (i) such repairs or renewals have been effectively made; and
 - (ii) the materials used in, and the workmanship of, such repairs or renewals are satisfactory,

the surveyor must make a declaration of survey to that effect and forward the declaration to the Director.

- (6) If the ship is installed with a regulated diesel engine to which Division 3 of Part 2, or Division 3 of Part 3, applies, the additional survey of the ship, in so far as it relates to the engine, is to be conducted in accordance with the NO_x Technical Code.
- (7) In this section—

applicable requirements (適用規定) means—

 - (a) for a ship in respect of which an International Air Pollution Prevention Certificate is in force, the requirements under Chapter 3 of Annex VI; and
 - (b) for a ship in respect of which a Hong Kong Air Pollution Prevention Certificate is in force, the requirements under Part 3.

80. Offences and penalties

- (1) If section 79(3) is contravened, the owner and the master of the ship concerned each commits an offence and is liable—
 - (a) on conviction on indictment to a fine at level 6; or
 - (b) on summary conviction to a fine at level 3.
- (2) It is a defence for a person charged under subsection (1) to show that the person had taken all reasonable steps to prevent the commission of the offence.
- (3) If an offence under subsection (1) is committed, or would, save for the operation of subsection (2), have been committed by the owner or the master of a ship due to the act or omission of some other person, that other person also commits the offence and may be charged with and convicted of the offence whether or not proceedings are taken against the owner or the master.

Division 3—Surveys in relation to IEE Certificates

81. Initial surveys

- (1) An initial survey of a ship is to be carried out by a Government surveyor—
 - (a) before the ship is put into service;
 - (b) before an International Energy Efficiency Certificate is issued for the first time in respect of the ship; or
 - (c) where, after the ship has undergone a major modification, the Director directs that an initial survey of the ship is to be carried out.
- (2) If, after having carried out an initial survey of the ship, the surveyor is satisfied as to the matters referred to in subsection (3), the surveyor must make a declaration of survey to that effect and forward the declaration to the Director.

- (3) The matters are—
- (a) in relation to an existing ship (other than a modified existing ship) or a special ship, that a Ship Energy Efficiency Management Plan referred to in section 30 in respect of the ship is placed on board the ship; or
 - (b) in relation to any other ship—
 - (i) (where the ship belongs to one of the categories of ship referred to in Regulation 20 of Annex VI) that an Attained EEDI has been calculated for the ship;
 - (ii) (where the ship belongs to a type of ship the reference line values and the reduction factors of which are set out in Annex VI) that the Attained EEDI of the ship is less than or equals to the Required EEDI of the ship calculated according to the reference line values and the reduction factors that are applicable to the ship as specified in Annex VI; and
 - (iii) that a Ship Energy Efficiency Management Plan referred to in section 30 in respect of the ship is placed on board the ship.

82. Additional survey

- (1) An additional survey of a new ship (other than a special ship) is to be carried out by a Government surveyor if—
 - (a) the ship has undergone a major modification; and
 - (b) the Director directs that an additional survey of the ship is to be carried out.
- (2) If, after having carried out an additional survey of the ship, the surveyor is satisfied as to the matters referred to in subsection (3), the surveyor must make a declaration of survey to that effect and forward the declaration to the Director.

- (3) The matters are—
- (a) (where the ship belongs to one of the categories of ship referred to in Regulation 20 of Annex VI) that an Attained EEDI has been calculated for the ship;
 - (b) (where the ship belongs to a type of ship the reference line values and the reduction factors of which are set out in Annex VI) that the Attained EEDI of the ship is less than or equals to the Required EEDI of the ship calculated according to the reference line values and the reduction factors that are applicable to the ship as specified in Annex VI; and
 - (c) that a Ship Energy Efficiency Management Plan referred to in section 30 in respect of the ship is placed on board the ship.
- (4) The additional survey may either be general or partial as the Director thinks fit.
-

Part 6**Other Duties****83. Duty to maintain condition of ships**

- (1) The owner and the master of a ship to which Part 2 applies must maintain the condition of the ship and of its equipment so as to comply with the requirements under Chapters 3 and 4 of Annex VI to ensure that the ship remains fit to proceed to sea without presenting any unreasonable threat of harm to the marine environment.
- (2) The owner and the master of a ship to which Part 3 applies must maintain the condition of the ship and of its equipment so as to comply with the requirements under Part 3 to ensure that the ship remains fit to proceed to sea without presenting any unreasonable threat of harm to the marine environment.

84. Certain alterations subject to approval of Director

The owner and the master of a Hong Kong ship of 400 gross tonnage or above must obtain the prior approval of the Director if any alteration is to be made to the equipment, systems, fittings, arrangements or material of the ship which are covered by the survey leading to the issue or endorsement of a specified Certificate.

85. Certificates to be kept on board

- (1) The owner and the master of a ship of 400 gross tonnage or above (other than a non-Chapter 4 ship) engaged in an international voyage must keep on board the ship the following certificates or documents issued in respect of the ship which are for the time being in force, and make them

available for inspection by a Government surveyor at all reasonable times—

- (a) an International Air Pollution Prevention Certificate, or a certificate or document issued by or under the authority of an Administration certifying or confirming that the ship is in compliance with Chapter 3 of Annex VI; and
 - (b) if section 5(1)(b) applies to the ship, an International Energy Efficiency Certificate, or a certificate or document issued by or under the authority of an Administration certifying or confirming that the ship is in compliance with Chapter 4 of Annex VI.
- (2) The owner and the master of a non-Chapter 4 ship of 400 gross tonnage or above engaged in an international voyage must keep on board the ship the following certificate or document issued in respect of the ship which is for the time being in force, and make it available for inspection by a Government surveyor at all reasonable times—
 - (a) an International Air Pollution Prevention Certificate; or
 - (b) a certificate or document issued by or under the authority of an Administration certifying or confirming that the ship is in compliance with Chapter 3 of Annex VI.
 - (3) The owner and the master of a ship of 400 gross tonnage or above (other than a ship that is not self-propelled) engaged in a non-international voyage must keep on board the ship the following certificate or document issued in respect of the ship which is for the time being in force, and make it available for inspection by a Government surveyor at all reasonable times—
 - (a) an International Air Pollution Prevention Certificate or a Hong Kong Air Pollution Prevention Certificate; or

- (b) a certificate or document issued by or under the authority of an Administration the effect of which is recognized by the Director as equivalent to that of an International Air Pollution Prevention Certificate or a Hong Kong Air Pollution Prevention Certificate.

86. Duty to report accidents or defects

- (1) If an accident occurs to, or a defect is discovered in, a ship, and the accident or defect substantially affects the efficiency or completeness of the equipment or systems of the ship, the owner and the master of the ship must report the accident or defect to the Authority.
- (2) The Director may, on receiving a report under subsection (1), cause an investigation to be initiated.
- (3) In this section—

Authority (主管當局) means—

- (a) if the ship is within the waters of Hong Kong, the Director; or
- (b) if the ship is a Hong Kong ship that is in a port of any Convention country outside Hong Kong, the Director and the appropriate authority of that country.

87. Duty to keep bunker delivery note and representative sample of fuel oil

- (1) The owner and the master of a ship of 400 gross tonnage or above must, on completion of a bunkering operation of fuel oil (excluding gas fuels)—
- (a) ensure that the label attached to the representative sample of the fuel oil delivered is signed by the officer in charge of the operation or the master of the ship;

- (b) keep the bunker delivery note on board the ship in a place so as to be readily available for inspection at all reasonable times—
- (i) for a ship engaged in international voyages, until the expiry of the period of 3 years after the day on which the fuel oil is delivered to the ship; and
- (ii) for a ship engaged in non-international voyages, until the expiry of the period of 6 months after the day on which the fuel oil is delivered to the ship; and
- (c) for a ship engaged in an international voyage, retain the representative sample of the fuel oil that accompanies the bunker delivery note until—
- (i) the fuel oil is substantially consumed; or
- (ii) the expiry of the period of 12 months beginning on the day on which the fuel oil is delivered to the ship,
- whichever is the later.

- (2) Subsection (1) does not apply to a ship which uses—
- (a) coal in solid form; or
- (b) nuclear fuels.

88. Duties of local supplier of fuel oil

- (1) A local supplier must, in respect of any fuel oil (excluding gas fuels) delivered by the supplier to be used on board a ship of 400 gross tonnage or above—
- (a) prepare a bunker delivery note which contains the information specified in Appendix V to Annex VI;
- (b) sign and certify a declaration in the bunker delivery note to confirm that the fuel oil delivered complies with the

- requirements on the quality of fuel oil set out in Regulations 14 and 18 of Annex VI;
- (c) seal a representative sample of the fuel oil delivered and sign the label attached to the sample on completion of the bunkering operation to confirm that it is a true sample of the fuel oil delivered;
 - (d) deliver to the officer in charge of the bunkering operation or the master of the ship the bunker delivery note and the representative sample of the fuel oil delivered;
 - (e) keep a copy of the bunker delivery note for a period of 3 years after the day on which the fuel oil is delivered to the ship; and
 - (f) make the copy kept under paragraph (e) available for inspection at all reasonable times.
- (2) A local supplier must, in respect of gas fuels delivered by the supplier to be used on board a ship of 400 gross tonnage or above for combustion purpose, make a record of the sulphur content of the gas fuels.
 - (3) This section does not apply to a ship which uses—
 - (a) coal in solid form; or
 - (b) nuclear fuels.

89. Offences and penalties

- (1) If any of the requirements in section 83(1) or (2), 84, 85(1), (2) or (3), 86(1) or 87(1) is contravened in respect of a ship, the owner and the master of the ship each commits an offence.
- (2) If any of the requirements in section 88(1) or (2) is contravened, the local supplier concerned commits an offence.
- (3) A person who commits an offence under this section is liable—

- (a) on conviction on indictment to a fine at level 6; or
 - (b) on summary conviction to a fine at level 3.
- (4) It is a defence for a person charged under this section to show that the person had taken all reasonable steps to prevent the commission of the offence.
 - (5) If an offence under this section is committed, or would, save for the operation of subsection (4), have been committed by the owner or the master of a ship due to the act or omission of some other person, that other person also commits the offence and may be charged with and convicted of the offence whether or not proceedings are taken against the owner or the master.

Part 7**Powers of Government Surveyors****90. Power to inspect bunker delivery notes, etc.**

- (1) A Government surveyor may, for controlling the quality of fuel oil that is supplied to a ship to which this section applies—
 - (a) require the owner or master of the ship to provide for inspection—
 - (i) the bunker delivery note of the fuel oil required to be kept under section 87; and
 - (ii) the representative sample of the fuel oil that is required to be retained under section 87;
 - (b) require the local supplier who supplied the fuel oil to the ship to provide for inspection a copy of the bunker delivery note required to be kept under section 88;
 - (c) make a copy of the bunker delivery note referred to in paragraph (a) or (b); or
 - (d) require the master, any other officer in charge of the ship or the local supplier to certify that the copy made under paragraph (c) is a true copy of the bunker delivery note.
- (2) This section applies to a ship of 400 gross tonnage or above which is within the waters of Hong Kong.

91. Power of Government surveyors to inspect, examine etc. ships

- (1) Any of the powers conferred by this section may be exercised for the purpose of ascertaining whether this Regulation has been or is being complied with.
- (2) A Government surveyor may, at any reasonable time—

- (a) board a ship that is within the waters of Hong Kong; and
 - (b) take with the surveyor any other person and any equipment or materials required to assist the surveyor.
- (3) After boarding the ship, the surveyor may—
- (a) inspect the ship;
 - (b) make any examination and investigation as the surveyor considers necessary;
 - (c) take samples of any article or substance found on the ship that the surveyor may reasonably require for the inspection, examination or investigation;
 - (d) inspect, seize and remove from the ship any article or substance in respect of which the surveyor suspects on reasonable grounds that an offence under this Regulation has been committed;
 - (e) detain the article or substance for so long as is necessary—
 - (i) for the inspection, examination or investigation; and
 - (ii) to ensure that it is available for use as evidence in any proceedings for an offence under this Regulation;
 - (f) take any measurements and photographs and make any recordings that the surveyor may reasonably require for the inspection, examination or investigation;
 - (g) require that the ship or any part of it, or anything on the ship, is to be left undisturbed (whether generally or in particular respects) for so long as is necessary for the inspection, examination or investigation;

- (h) require any person who the surveyor reasonably believes is able to give any information relevant to the inspection, examination or investigation—
 - (i) to attend at a place and time specified by the surveyor;
 - (ii) to answer the questions that the surveyor thinks fit to ask; and
 - (iii) to sign a declaration of the truth of the person's answers;
 - (i) require the production of, and inspect and take copies of or of any entry in—
 - (i) any certificates, books or documents that are required to be kept under this Regulation; and
 - (ii) any other certificates, books or documents that the surveyor considers necessary for the inspection, examination or investigation; and
 - (j) require any person to afford the surveyor such facilities and assistance with respect to any matters or things within that person's control or in relation to which that person has responsibilities as the surveyor considers necessary to enable the surveyor to exercise any power conferred by this section.
- (4) If an inspection of a ship under subsection (3) reveals a deficiency, the Director may give a direction to the master of the ship requiring the master to cause the ship not to proceed to sea until the deficiency is rectified.
- (5) A master to whom a direction is given under subsection (4) must—
- (a) comply with the direction;
 - (b) take steps to rectify the deficiency; and

- (c) inform the Director once the deficiency is rectified.
- (6) If the ship concerned is a Hong Kong ship and the deficiency is not rectified within the period specified by the Director, the Director may, by written notice to the owner and the master of the ship, withdraw the International Air Pollution Prevention Certificate, the Hong Kong Air Pollution Prevention Certificate or the International Energy Efficiency Certificate issued in respect of the ship.
- (7) On receiving a notice under subsection (6), the owner and the master of the ship must deliver the Certificate concerned to the Director immediately.
- (8) The owner or the master of the ship may, after the deficiency in respect of the ship has been rectified, apply to the Director for the return of the Certificate concerned.
- (9) On receiving an application under subsection (8), if the Director is satisfied that the deficiency in respect of the ship has been rectified, the Director must, by written notice to the owner or the master, return the Certificate concerned to the owner or the master.

92. Obstruction and non-compliance with requirements

- (1) A person must not—
- (a) wilfully obstruct a Government surveyor in the exercise of any power conferred by section 90 or 91; or
 - (b) make a statement or sign a declaration that the person knows is false, or recklessly make a statement or sign a declaration that is false, in purported compliance with a requirement under section 91(3)(h).
- (2) A person must comply with a requirement imposed on the person under section 91(3).

93. Offences and penalties

- (1) If section 91(7) is contravened, the owner and the master of the ship concerned each commits an offence and is liable—
 - (a) on conviction on indictment to a fine at level 6; or
 - (b) on summary conviction to a fine at level 3.
- (2) A person who contravenes section 92(1) commits an offence and is liable to a fine at level 6.
- (3) A person who fails to comply with section 92(2) commits an offence and is liable to a fine at level 6.
- (4) It is a defence for a person charged under subsection (1) to show that the person had taken all reasonable steps to prevent the commission of the offence.
- (5) If an offence under this section is committed, or would, save for the operation of subsection (4), have been committed by the owner or the master of a ship due to the act or omission of some other person, that other person also commits the offence and may be charged with and convicted of the offence whether or not proceedings are taken against the owner or the master.

Part 8**Powers of Director****94. Director may appoint Government surveyors**

The Director may appoint a person to be a Government surveyor for the purposes of this Regulation.

95. Director may recognize organizations to survey ships and issue certificates etc.

The Director may recognize an organization for—

- (a) carrying out surveys of Hong Kong ships in conformity with Part 5;
- (b) issuing the following certificates in respect of Hong Kong ships in conformity with Part 4—
 - (i) International Air Pollution Prevention Certificates;
 - (ii) Hong Kong Air Pollution Prevention Certificates; or
 - (iii) International Energy Efficiency Certificates;
- (c) making endorsements on the Certificates referred to in paragraph (b) that are issued by the organization in conformity with Part 5;
- (d) with the prior written consent of the Director, granting extensions of the validity periods of International Air Pollution Prevention Certificates or Hong Kong Air Pollution Prevention Certificates that are issued by the organization;
- (e) altering any particulars contained in the Certificates referred to in paragraph (b) that are issued by the organization;

- (f) issuing certified true copies of the Certificates referred to in paragraph (b) that are issued by the organization; and
- (g) specifying any corrective actions which the organization considers necessary to be taken in respect of Hong Kong ships.

96. Director may request Convention countries to survey Hong Kong ships and issue or endorse certificates

The Director may request any Convention country—

- (a) to carry out a survey in respect of a Hong Kong ship of 400 gross tonnage or above on behalf of the Director in conformity with Annex VI; and
- (b) to do the following—
 - (i) issue an International Air Pollution Prevention Certificate or an International Energy Efficiency Certificate in respect of the ship in conformity with Annex VI; or
 - (ii) endorse on an International Air Pollution Prevention Certificate or an International Energy Efficiency Certificate issued in respect of the ship in conformity with Annex VI.

97. Director may at request of Convention countries survey non-Hong Kong ships and issue or endorse certificates

The Director may, at the request of any Convention country—

- (a) cause a non-Hong Kong ship that is within the waters of Hong Kong to be surveyed under Part 5 as if the ship were a Hong Kong ship; and
- (b) do the following—

- (i) issue an IAPP Certificate or an IEE Certificate in respect of the ship under Part 4 as if the ship were a Hong Kong ship; or
- (ii) endorse on an International Air Pollution Prevention Certificate or an International Energy Efficiency Certificate issued in respect of the ship in conformity with Annex VI.

98. Director may accept equivalents

The Director may allow any fitting, material, appliance or apparatus to be fitted in a ship or any procedures, alternative fuel oils, or compliance methods to be used for complying with—

- (a) in relation to a ship to which Part 2 applies, Chapter 3 of Annex VI; or
- (b) in relation to a ship to which Part 3 applies, Part 3.

99. Director may grant exemption

The Director may exempt any ship or class or description of ships from any of the requirements of this Regulation on such conditions as the Director may specify, and the Director may alter or cancel any such exemption.

Part 9

Miscellaneous

100. Access to Annex VI and NO_x Technical Code

- (1) The Director must keep a copy of the English and Chinese texts of Annex VI and the NO_x Technical Code at the office of the Director.
- (2) The Director must allow the public to inspect the texts free of charge at the office during normal office hours.


Secretary for Transport and Housing

26th January 2016

Explanatory Note

The object of this Regulation is to implement Annex VI to the International Convention for the Prevention of Pollution from Ships, 1973.

2. Part 1 contains provisions that provide for the commencement and application of the Regulation, and the definitions of words and expressions used in the Regulation.
3. Part 2 governs ships engaged in international voyages. Division 1 requires certain certificates to be in force in respect of the ships. Divisions 2 and 3 regulate the emission of ozone depleting substances and nitrogen oxides. Division 4 regulates the sulphur content of fuel oil. Division 5 and 7 set out certain requirements relating to volatile organic compounds and fuel oil quality. Division 6 governs shipboard incineration. Division 8 requires the ships to calculate an Attained Energy Efficiency Design Index. Division 9 requires the ships to keep on board a Ship Energy Efficiency Management Plan. Division 10 sets out the offences and penalties for Part 2.
4. Part 3 governs ships engaged in non-international voyages. Division 1 requires certain certificates to be in force in respect of the ships. Divisions 2 and 3 regulate the emission of ozone depleting substances and nitrogen oxides. Division 4 regulates the sulphur content of fuel oil. Division 5 and 7 set out certain requirements relating to volatile organic compounds and fuel oil quality. Division 6 governs shipboard incineration. Division 8 sets out the offences and penalties for Part 3.
5. Part 4 governs the application, issue, withdrawal, cancellation, duration and cessation of certificates. Part 5 sets out the various types of surveys that are to be carried out in respect of a ship.

6. Part 6 sets out certain duties of the owner and the master of a ship and of a local supplier of fuel oil, and the related offences and penalties. Part 7 deals with the power of Government surveyors and Part 8 provides for the power of the Director of Marine.

**Merchant Shipping (Prevention and Control of
Pollution) (Fees) (Amendment) Regulation 2016**

(Made by the Chief Executive in Council under section 3(2A) of the
Merchant Shipping (Prevention and Control of Pollution) Ordinance
(Cap. 413))

1. Commencement

This Regulation comes into operation on 1 July 2016.

**2. Merchant Shipping (Prevention and Control of Pollution)
(Fees) Regulation amended**

The Merchant Shipping (Prevention and Control of Pollution)
(Fees) Regulation (Cap. 413 sub. leg. L) is amended as set out in
sections 3, 4 and 5.

3. Section 2 amended (interpretation)

Section 2, definition of *Government surveyor*, paragraph (b)—

Repeal

everything after “under”

Substitute

“the Merchant Shipping (Prevention of Air Pollution)
Regulation;”.

4. Schedule 1 amended (specified services)

Schedule 1, paragraph 2—

Repeal

“(Cap. 413 sub. leg. M)”.

5. Schedule 2 amended (specified certificates)

Schedule 2—

Repeal paragraph 2**Substitute**

“2. A HKAPP Certificate, IAPP Certificate or IEE
Certificate within the meaning of the Merchant Shipping
(Prevention of Air Pollution) Regulation.”.


Clerk to the Executive Council

COUNCIL CHAMBER

26th January, 2016

Explanatory Note

This Regulation amends the Merchant Shipping (Prevention and Control of Pollution) (Fees) Regulation (Cap. 413 sub. leg. L) to introduce the fees payable for the services rendered by Government surveyors, and the issue of HKAPP Certificates, IAPP Certificates and IEE Certificates by the Director of Marine, under the new Merchant Shipping (Prevention of Air Pollution) Regulation.

Proposed Application of “Direct Reference Approach”

Item	Subject Matters Involved	Relevant Provisions of the Revised Regulation
1.	To define the term “Attained Energy Efficiency Design Index”	<p>Section 2 – “<i>Attained EEDI</i> (達到的能效設計指數) means the value of the Energy Efficiency Design Index of a ship determined in accordance with regulation 20 of Annex VI;”</p> <p><i>[Note: A copy of Annex VI to the Convention is at <u>E</u>¹.]</i></p>
2.	To define the term “cruise passenger ship”	<p>Section 2 – “cruise passenger ship (豪華郵輪) means a cruise passenger ship as defined in Regulation 2 of Annex VI;”</p>
3.	To define the term “LNG carrier”	<p>Section 2 – “<i>LNG carrier</i> (LNG 運輸船) means a LNG carrier as defined in Regulation 2 of Annex VI;”</p>
4.	To define the term “major modification”	<p>Section 2 – “major modification (重大改裝), in relation to a ship, means a major</p>

¹ The reference material is not an official document from the IMO but a consolidated version of the amendments to MAPROL Annex VI adopted by the IMO through Resolutions.

		conversion of the ship as defined in Regulation 2 of Annex VI; "
5.	To define the term "ozone depleting substance"	Section 2 – " <i>ozone depleting substance</i> (消耗臭氧物質) means any controlled substance defined in paragraph 4 of article 1 of the Montreal Protocol on Substances that Deplete the Ozone Layer, 1987, ² as listed in Annex A, B, C or E to the Protocol, as from time to time revised or amended by any revision or amendment that applies to Hong Kong;"
6.	To define the term "Required Energy Efficiency Design Index"	Section 2 – " Required EEDI (要求的能效設計指數) means the maximum value of the Attained EEDI that is allowed for a ship as determined in accordance with Regulation 21 of Annex VI; "
7.	Exception to certificates to be held by ships engaged in international voyages	Section 6(1)(a) – "a certificate or document (other than an International Air Pollution Prevention Certificate) certifying or confirming that the ship is in compliance with Chapter 3 of Annex VI; "

² According to paragraph 4 of article 1 of the Montreal Protocol on Substances that Deplete the Ozone Layer, 1987, "Controlled substance" means a substance in Annex A, Annex B, Annex C or Annex E to this Protocol, whether existing alone or in a mixture. It includes the isomers of any such substance, except as specified in the relevant Annex, but excludes any controlled substance or mixture which is in a manufactured product other than a container used for the transportation or storage of that substance.

		<p>Section 6(1)(b) –</p> <p>“a certificate or document (other than an International Energy Efficiency Certificate) certifying or confirming that the ship is in compliance with Chapter 4 of Annex VI.”</p>
8.	Prohibit the emission of ozone depleting substances and exception	<p>Section 7 –</p> <p>“(1)A ship is not to be engaged in any deliberate emission of ozone depleting substances as referred to in Regulation 12 of Annex VI.</p> <p>(2) Subsection (1) does not apply to—</p> <p>(a) an emission referred to in Regulation 3 of Annex VI; or”</p>
9.	Prohibit the installation of equipment containing ozone depleting substances on certain ships	<p>Section 8 –</p> <p>“(1) An installation which contains ozone depleting substances, including hydro-chlorofluorocarbons, is prohibited on a ship referred to in Regulation 12 of Annex VI”</p>
10.	To define the term “ <i>installation</i> ” in relation to ozone depleting substances	<p>Section 8 –</p> <p>“(2)(b)(iii) a permanently sealed equipment referred to in Regulation 12 of Annex VI”</p>
11.	Exception to emission of Nitrogen oxides	<p>Section 13 –</p> <p>“The requirements in this Division do not apply to an emission referred to in</p>

		Regulation 3 of Annex VI'
12.	Compliance of NO _x emission standard	Section 14– “A regulated diesel engine installed on a ship must not be put into operation unless the emission of nitrogen oxides from the engine is kept within the emission limit applicable to the ship set out in Regulation 13 of Annex VI ”
13.	Determine of NO _x emission limits	Section 15 – “In determining whether the emission of nitrogen oxides from a regulated diesel engine is kept within an emission limit, the criteria as set out in the NO_x Technical Code are to be applied.”
14.	To define SO _x Emission Control Area (SECA)	Section 16 – “In this Division, SO _x Emission Control Area (硫氧化物排放控制區) means an area specified in Regulation 14 of Annex VI as an emission control area.”

15.	Sulphur content of fuel oil used outside or within the SO _x Emission Control Area	<p>Section 17–</p> <p>“(1) The sulphur content of any fuel oil used on board a ship outside an SO_x Emission Control Area must not exceed the limit set out in Regulation 14.1 of Annex VI.</p> <p>(2) The sulphur content of any fuel oil used on board a ship within an SO_x Emission Control Area must not exceed the limit set out in Regulation 14.4 of Annex VI”</p>
16.	Change-over of fuel oil on entering or leaving SO _x Emission Control Area	<p>Section 18 –</p> <p>“(2) Before a ship enters an SO_x Emission Control Area, sufficient time must be allowed for the fuel oil service system on the ship to be fully flushed of all fuel oil the sulphur content of which exceeds the limit set out in Regulation 14.4 of Annex VI”</p>
17.	Entries to be made related to change-over of fuel oil on entering or leaving SO _x Emission Control Area	<p>Section 18(5) –</p> <p>“(a) the volume of the fuel oil the sulphur content of which is within the limit set out in Regulation 14.4 of Annex VI in each tank; and”</p>
18.	Notification to be submitted to IMO for a designated port or terminal that controlling the emission of volatile organic compounds	<p>Section 19–</p> <p>“designated port or terminal (指定港口或碼頭) means a port or terminal—</p> <p>(a) which is designated by a Convention country as a port or terminal at which emission of volatile organic compounds is to be regulated; and</p> <p>(b) for which a notification of the designation has been submitted to IMO pursuant to Regulation 15 of Annex VI;”</p>

19.	Requirements on shipboard incineration within HK waters	<p>Section 23(3) – “If an approved incinerator is a post-2000 incinerator— (a) it must operate within the limits set out in Appendix IV to ”</p>
20.	Operation manual of an incinerator	<p>Section 23(4)(b) – “(4) The operating manual is one— (a) which is issued by the manufacturer of the incinerator; and (b) which provides guidance on how the incinerator may be operated within the limits set out in Appendix IV of Annex VI.”</p>
21.	List of substances that are not allowed to be incinerated within HK waters	<p>Section 23(5) – “The substance for incineration must not be a substance which is listed in Regulation 16.2 of Annex VI.”</p>
22.	Requirements on shipboard incineration on HK ships outside HK waters	<p>Section 24(3) (a)– “If a shipboard incinerator is a post-2000 incinerator— (a) it must operate within the limits set out in Appendix IV to Annex VI”</p>

23.		<p>Section 24(4) –</p> <p>“The operating manual is one-</p> <p>(a) Which is issued by the manufacturer of the incinerator; and</p> <p>(b) Which provides guidance on how the incinerator may be operated within the limits set out in Appendix IV to Annex VI.”</p>
24.	List of substances that are not allowed to be incinerated on HK ships outside HK waters	<p>Section 24(5) –</p> <p>“The substance for incineration must not be a substance which is listed in Regulation 16.2 of Annex VI.”</p>
25.	Quality of Fuel oil	<p>Section 27–</p> <p>“The quality of fuel oil used on board a ship must meet the requirements set out in Regulation 18 of Annex VI.”</p>
26.	Application of EEDI Requirements	<p>Section 28 –</p> <p>“(1) This Division applies to a ship—</p> <p>(a) which is of 400 gross tonnage or above; and</p> <p>(b) which belongs to one of the categories of ship referred to in Regulation 20 of Annex VI.”</p>

27.	Attained EEDI Requirements	<p>Section 29 (2)–</p> <p>“(2) Where a ship belongs to a type of ship the reference line values and the reduction factors of which are set out in Annex VI, the Attained EEDI of the ship must be less than or equals to the Required EEDI of the ship calculated according to the reference line values and the reduction factors that are applicable to the ship as specified in Annex VI.”</p>
28.	Prohibit the emission of ozone depleting substances and exception	<p>Section 35 –</p> <p>“(1) A ship is not to be engaged in any deliberate emission of ozone depleting substances as referred to in Regulation 12 of Annex VI.</p> <p>(2) Subsection (1) does not apply to—</p> <p>(a) an emission referred to in Regulation 3 of Annex VI;”</p>
29.	Prohibit the installation of equipment containing ozone depleting substances on certain ships	<p>Section 36 (1) –</p> <p>“(1) An installation which contains ozone depleting substances, including hydro-chlorofluorocarbons, is prohibited on a ship referred to in Regulation 12 of Annex VI.”</p>
30.	Exception to emission of Nitrogen oxides	<p>Section 41(3) –</p> <p>“(3) The requirements in this Division do not apply to an emission referred to in Regulation 3 of Annex VI.”</p>

31.	To define the term “designated port or terminal”	<p>Section 47 –</p> <p>“designated port or terminal (指定港口或碼頭) means a port or terminal—</p> <p>(a) which is designated by a Convention country as a port or terminal at which emission of volatile organic compounds is to be regulated; and</p> <p>(b) for which a notification of the designation has been submitted to IMO pursuant to Regulation 15 of Annex VI;”</p>
32.	To define the term “tanker”	<p>Section 47 –</p> <p>“tanker (液貨船) has the meaning given by Regulation 2 of Annex VI in relation to the control over the emission of volatile organic compounds.”</p>
33.	Requirements on shipboard incineration within HK waters	<p>Section 51(3)(a) –</p> <p>“If an approved incinerator is a post-2000 incinerator—</p> <p>(a) it must operate within the limits set out in Appendix IV to Annex VI;”</p>
34.	Operation manual of an incinerator	<p>Section 51(4)(b) –</p> <p>“The operating manual is one—</p> <p>(a) which is issued by the manufacturer of the incinerator; and</p> <p>(b) which provides guidance on how the incinerator may be operated within the limits set out in Appendix IV of Annex VI”</p>

35.	List of substances that are not allowed to be incinerated within HK waters	<p>Section 51(5) –</p> <p>“The substance for incineration must not be a substance which is listed in Regulation 16.2 of Annex VI.”</p>
36.	Requirements on shipboard incineration on HK ships outside HK waters	<p>Section 52(3)(a) –</p> <p>“If a shipboard incinerator is a post-2000 incinerator—</p> <p>(a) it must operate within the limits set out in Appendix IV to Annex VI;”</p>
37.	Operation manual of an incinerator	<p>Section 52(4)(b) –</p> <p>“The operating manual is one—</p> <p>(a) which is issued by the manufacturer of the incinerator; and</p> <p>(b) which provides guidance on how the incinerator may be operated within the limits set out in Appendix IV of Annex VI.”</p>
38.	List of substances that are not allowed to be incinerated on HK ships outside HK waters	<p>Section 52(5) –</p> <p>“The substance for incineration must not be a substance which is listed in Regulation 16.2 of Annex VI.”</p>
39.	Quality of Fuel oil	<p>Section 55–</p> <p>“The quality of fuel oil used on board a ship must meet the requirements set out in Regulation 18 of Annex VI.”</p>

40.	Issue of an IAPP Certificate	<p>Section 58(3)(b) –</p> <p>“(b) that, on evidence of a declaration of survey forwarded to the Director under section 75 or 76, the equipment, systems, fittings, arrangements and material of the ship comply with the requirements under Chapter 3 of Annex VI.”</p>
41.	Duration of Certificates	<p>Section 64(3)–</p> <p>“(3) For the purpose of this Division, a Hong Kong Air Pollution Prevention Certificate issued in respect of a ship is to be regarded as an International Air Pollution Prevention Certificate referred to in Regulation 9 of Annex VI.”</p>
42.	Duration of specified Certificates after renewal surveys	<p>Section 65–</p> <p>“A new specified Certificate is issued in respect of a ship as a result of a renewal survey referred to in section 76 is valid for such period as may be specified by the Director in the Certificate in accordance with Regulation 9 of Annex VI.”</p>

43.	Initial Survey in relation to specified Certificates	<p>Section 75(3) –</p> <p>“If the ship is installed with a regulated diesel engine to which Division 3 of Part 2, or Division 3 of Part 3, applies, the initial survey of the ship, in so far as it relates to the engine, is to be conducted in accordance with the NO_x Technical Code.”</p>
		<p>Section 75(4) –</p> <p>“(4) In this section, applicable requirements (適用規定) means—</p> <p>(a) in relation to an initial survey referred to in section 58, the requirements under Chapter 3 of Annex VI; and</p> <p>(b) in relation to an initial survey referred to in section 59, the requirements under Part 3.”</p>
44.	Renewal Survey in relation to specified Certificates	<p>Section 76(4) –</p> <p>“If the ship is installed with a regulated diesel engine to which Division 3 of Part 2, or Division 3 of Part 3, applies, the renewal survey of the ship, in so far as it relates to the engine, is to be conducted in accordance with the NO_x Technical Code.”</p>

		<p>Section 76(5)(a) –</p> <p>“(5) In this section–</p> <p>applicable requirements (適用規定) means—</p> <p>(a) in relation to a renewal survey referred to in section 58, the requirements under Chapter 3 of Annex VI; and</p> <p>(b) in relation to a renewal survey referred to in section 59, the requirements under Part 3 of this Regulation”</p>
45.	Intermediate Survey in relation to specified Certificates	<p>Section 77(3) –</p> <p>“If the ship is installed with a regulated diesel engine to which Division 3 of Part 2, or Division 3 of Part 3, applies, the intermediate survey of the ship, in so far as it relates to the engine, is to be conducted in accordance with the NOx Technical Code.”</p>

		<p>Section 77(4) –</p> <p>“(4) In this section, applicable requirements (適用規定) means—</p> <p>(a) for a ship in respect of which an International Air Pollution Prevention Certificate is in force, the requirements under Chapter 3 of Annex VI; and</p> <p>(b) for a ship in respect of which a Hong Kong Air Pollution Prevention Certificate is in force, the requirements under Part 3 of this Regulation.”</p>
46.	Annual Survey in relation to specified Certificates	<p>Section 78(5) –</p> <p>“If the ship is installed with a regulated diesel engine to which Division 3 of Part 2, or Division 3 of Part 3, applies, the annual survey of the ship, in so far as it relates to the engine, is to be conducted in accordance with the NOx Technical Code.”</p>

		<p>Section 78(6) –</p> <p>“(6) In this section, applicable requirements (適用規定) means—</p> <p>(a) for a ship in respect of which an International Air Pollution Prevention Certificate is in force, the requirements under Chapter 3 of Annex VI; and</p> <p>(b) for a ship in respect of which a Hong Kong Air Pollution Prevention Certificate is in force, the requirements under Part 3 of this Regulation.”</p>
47.	Additional Survey in relation to specified Certificates	<p>Section 79(6) –</p> <p>“If the ship is installed with a regulated diesel engine to which Division 3 of Part 2, or Division 3 of Part 3, applies, the additional survey of the ship, in so far as it relates to the engine, is to be conducted in accordance with the NOx Technical Code.”</p>

		<p>Section 79(7) –</p> <p>“(7) In this section, applicable requirements (適用規定) means—</p> <p>(a) for a ship in respect of which an International Air Pollution Prevention Certificate is in force, the requirements under Chapter 3 of Annex VI; and</p> <p>(b) for a ship in respect of which a Hong Kong Air Pollution Prevention Certificate is in force, the requirements under Part 3.”</p>
48.	Initial survey in relation to International Energy Efficiency Certificate	<p>Section 81(3)(b) –</p> <p>“(b) in relation to any other ship—</p> <p>(i) (where the ships belongs to one of the categories of ship referred to in Regulation 20 of Annex VI) that an Attained EEDI has been calculated for the ship;</p> <p>(ii) (where the ship belongs to a type of ship the reference line values and the reduction factors of which are set out in Annex VI) that the Attained EEDI of the ship is less than or equals to the Required EEDI of the ship calculated according to the reference line values and the reduction factors that are applicable to the ship as specified in Annex VI; and</p> <p>(iii) that a Ship Energy Efficiency Management Plan referred to in section 30 in respect of the ship is placed on board the ship.”</p>

49.	Additional survey in relation to International Energy Efficiency Certificate	<p>Section 82(3) –</p> <p>“(3) The matters are—</p> <p>(a) (where the ships belongs to one of the categories of ship referred to in Regulation 20 of Annex VI) that an Attained EEDI has been calculated for the ship;</p> <p>(b) (where the ship belongs to a type of ship the reference line values and the reduction factors of which are set out in Annex VI) that the Attained EEDI of the ship is less than or equals to the Required EEDI of the ship calculated according to the reference line values and the reduction factors that are applicable to the ship as specified in Annex VI; and</p> <p>(c) that a Ship Energy Efficiency Management Plan referred to in section 30 in respect of the ship is placed on board the ship.”</p>
50.	Duty to maintain condition of ships	<p>Section 83(1) –</p> <p>“(1) The owner and the master of a ship to which Part 2 applies must maintain the condition of the ship and of its equipment so as to comply with the requirements under Chapter 3 and Chapter 4 of Annex VI to ensure that the ship remains fit to proceed to sea without presenting any unreasonable threat of harm to the marine environment.”</p>

51.	Duties of local supplier of fuel oil to prepare a bunker delivery note	<p>Section 88(1)–</p> <p>“(1) A local supplier must, in respect of any fuel oil (excluding gas fuels) delivered by the supplier to be used on board a ship of 400 gross tonnage or above—</p> <p>(a) prepare a bunker delivery note which contains at least the information specified in Appendix V to Annex VI;</p> <p>(b) sign and certify a declaration in the bunker delivery note to confirm that the fuel oil delivered complies with the requirements on the quality of fuel oil set out in Regulations 14 and 18 of Annex VI;”</p>
52.	Director may request Convention countries to survey Hong Kong ships and issue or endorse certificates	<p>Section 96 –</p> <p>“The Director may request any Convention country—</p> <p>(a) to carry out a survey in respect of a Hong Kong ship of 400 gross tonnage or above on behalf of the Director in conformity with Annex VI; and</p> <p>(b) to do the following—</p> <p>(i) to issue an International Air Pollution Prevention Certificate or an International Energy Efficiency Certificate in respect of the ship in conformity with Annex VI; or</p> <p>(ii) to endorse on an International Air Pollution Prevention Certificate or an International Energy Efficiency Certificate issued in respect of the ship in conformity with Annex VI.”</p>

53.	Director may at request of Convention countries survey non-Hong Kong ships and issue or endorse certificates	<p>Section 97 (b) –</p> <p>“(b) do the following—</p> <ul style="list-style-type: none"> (i) issue an IAPP Certificate or an IEE Certificate in respect of the ship under Part 4 of the Regulation as if the ship were a Hong Kong ship; or (ii) endorse on an International Air Pollution Prevention Certificate or an International Energy Efficiency Certificate issued in respect of the ship in conformity with Annex VI.”
54.	To accept equivalent	<p>Section 98 –</p> <p>“The Director may allow any fitting, material, appliance or apparatus to be fitted in a ship or any procedures, alternative fuel oils, or compliance methods to be used for complying with—</p> <ul style="list-style-type: none"> (a) in relation to a ship to which Part 2 of this Regulation applies, Chapter 3 of Annex VI; or (b) in relation to a ship to which Part 3 of this Regulation applies, Part 3 of this Regulation.”

**International Convention for
the Prevention of Pollution from Ships, 1973
as modified by the Protocol of 1978 (MARPOL)**

ANNEX VI

**Regulations for the Prevention of Air Pollution
from Ships**

Contents

CHAPTER I	GENERAL.....	- 1 -
Regulation 1	<i>Application</i>	- 1 -
Regulation 2	<i>Definitions</i>	- 1 -
Regulation 3	<i>Exceptions and Exemptions</i>	- 6 -
Regulation 4	<i>Equivalents</i>	- 7 -
CHAPTER II	SURVEY, CERTIFICATION AND MEANS OF CONTROL.....	- 8 -
Regulation 5	<i>Surveys</i>	- 8 -
Regulation 6	<i>Issue or endorsement of a Certificate</i>	- 10 -
Regulation 7	<i>Issue of a Certificate by another Party</i>	- 11 -
Regulation 8	<i>Form of Certificate</i>	- 11 -
Regulation 9	<i>Duration and Validity of Certificate</i>	- 11 -
Regulation 10	<i>Port State Control on Operational Requirements</i>	- 14 -
Regulation 11	<i>Detection of Violations and Enforcement</i>	- 14 -
CHAPTER III	REQUIREMENTS FOR CONTROL OF EMISSIONS FROM SHIPS -	16 -
Regulation 12	<i>Ozone Depleting Substances</i>	- 16 -
Regulation 13	<i>Nitrogen Oxides (NO_x)</i>	- 17 -
Regulation 14	<i>Sulphur Oxides (SO_x) and Particulate Matter</i>	- 22 -
Regulation 15	<i>Volatile Organic Compounds (VOCs)</i>	- 23 -
Regulation 16	<i>Shipboard Incineration</i>	- 24 -
Regulation 17	<i>Reception Facilities</i>	- 26 -
Regulation 18	<i>Fuel Oil Availability and Quality</i>	- 27 -
CHAPTER IV	REGULATIONS ON ENERGY EFFICIENCY FOR SHIPS.....	- 30 -
Regulation 19	<i>Application</i>	- 30 -
Regulation 20	<i>Attained Energy Efficiency Design Index (Attained EEDI)</i>	- 31 -
Regulation 21	<i>Required EEDI</i>	- 31 -
Regulation 22	<i>Ship Energy Efficiency Management Plan (SEEMP)</i>	- 34 -
Regulation 23	<i>Promotion of technical co-operation and transfer of technology relating to the improvement of energy efficiency of ships</i>	- 34 -
CHAPTER V	VERIFICATION OF COMPLIANCE WITH THE PROVISIONS OF THIS ANNEX	- 35 -
Regulation 24	<i>Application</i>	- 35 -
Regulation 25	<i>Verification of compliance</i>	- 35 -

APPENDIX I FORM OF INTERNATIONAL AIR POLLUTION PREVENTION (IAPP) CERTIFICATE.....	- 36 -
APPENDIX II TEST CYCLES AND WEIGHTING FACTORS	- 45 -
APPENDIX III CRITERIA AND PROCEDURES FOR DESIGNATION OF EMISSION CONTROL AREAS.....	- 47 -
APPENDIX IV TYPE APPROVAL AND OPERATING LIMITS FOR SHIPBOARD INCINERATORS	- 49 -
APPENDIX V INFORMATION TO BE INCLUDED IN THE BUNKER DELIVERY NOTE.....	- 50 -
APPENDIX VI FUEL VERIFICATION PROCEDURE FOR MARPOL ANNEX VI FUEL OIL SAMPLES	- 51 -
Appendix VII NORTH AMERICAN EMISSION CONTROL AREA	- 54 -
APPENDIX VIII FORM OF INTERNATIONAL ENERGY EFFICIENCY (IEE) CERTIFICATE	- 65 -

MARPOL Annex VI*

Regulations for the Prevention of Air Pollution from Ships

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, 16, 18, 19, 20, 21 and 22 of this Annex.

Regulation 2 *Definitions*

For the purpose of this Annex:

- 1 *Annex* means Annex VI to the International Convention for the Prevention of Pollution from Ships 1973 (MARPOL), as modified by the Protocol of 1978 relating thereto, and as modified by the Protocol of 1997, as 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.
- 2 *A similar stage of construction* means the stage at which:
 - .1 construction identifiable with a specific ship begins; and
 - .2 assembly of that ship has commenced comprising at least 50 tons or one per cent of the estimated mass of all structural material, whichever is less.
- 3 *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.
- 4 *Auxiliary control device* means a system, function, or control strategy installed on a marine diesel engine that is used to protect the engine and/or its ancillary equipment against operating conditions that could result in damage or failure, or that is used to facilitate the starting of the engine. An auxiliary control device may also be a strategy or measure that has been satisfactorily demonstrated not to be a defeat device.

* The original MARPOL Annex VI entered into force on 19 May 2005. The revised MARPOL Annex VI adopted by resolution MEPC.176(58) entered into force on 1 July 2010. The amendments thereto, adopted by resolution MEPC.202(62) and MEPC.203(62), entered into force on 1 January 2013, adopted by resolution MEPC 217(63) entered into force on 1 August 2013, adopted by resolution MEPC 247(66) entered into force on 1 January 2016, adopted by resolution MEPC 251(66) entered into force on 1 September 2015, and those adopted by resolution MEPC 258(67) will enter into force on 1 March 2016.

5 *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 1,200°C.

6 *Defeat device* means a device which measures, senses, or responds to operating variables (e.g., engine speed, temperature, intake pressure or any other parameter) for the purpose of activating, modulating, delaying or deactivating the operation of any component or the function of the emission control system such that the effectiveness of the emission control system is reduced under conditions encountered during normal operation, unless the use of such a device is substantially included in the applied emission certification test procedures.

7 *Emission* means any release of substances, subject to control by this Annex, from ships into the atmosphere or sea.

8 *Emission Control Area* means an area where the adoption of special mandatory measures for emissions from ships is required to prevent, reduce and control air pollution from NO_x or SO_x and particulate matter or all three types of emissions and their attendant adverse impacts on human health and the environment. Emission Control Areas shall include those listed in, or designated under, regulations 13 and 14 of this Annex.

9 *Fuel oil* means any fuel delivered to and intended for combustion purposes for propulsion or operation on board a ship, including gas, distillate and residual fuels.

10 *Gross tonnage* means the gross tonnage calculated in accordance with the tonnage measurement regulations contained in Annex I to the International Convention on Tonnage Measurements of Ships, 1969 or any successor Convention.

11 *Installations* in relation to regulation 12 of this Annex means the installation of systems, equipment including portable fire-extinguishing units, insulation, or other material on a ship, but excludes the repair or recharge of previously installed systems, equipment, insulation, or other material, or the recharge of portable fire-extinguishing units.

12 *Installed* means a marine diesel engine that is or is intended to be fitted on a ship, including a portable auxiliary marine diesel engine, only if its fuelling, cooling, or exhaust system is an integral part of the ship. A fuelling system is considered integral to the ship only if it is permanently affixed to the ship. This definition includes a marine diesel engine that is used to supplement or augment the installed power capacity of the ship and is intended to be an integral part of the ship.

13 *Irrational emission control strategy* means any strategy or measure that, when the ship is operated under normal conditions of use, reduces the effectiveness of an emission control system to a level below that expected on the applicable emission test procedures.

14 *Marine diesel engine* means any reciprocating internal combustion engine operating on liquid or dual fuel, to which regulation 13 of this Annex applies, including booster/compound systems if applied. In addition, a gas fuelled engine installed on a ship constructed on or after 1 March 2016 or a gas fuelled additional or non-identical replacement engine installed on or after that date is also considered as a marine diesel engine.

15 *NO_x Technical Code* means the Technical Code on Control of Emission of Nitrogen Oxides from Marine Diesel Engines adopted by resolution 2 of the 1997 MARPOL Conference, as 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.

16 *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

17 *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.

18 *Shipboard incinerator* means a shipboard facility designed for the primary purpose of incineration.

19 *Ships constructed* means ships the keels of which are laid or which are at a similar stage of construction.

20 *Sludge oil* means sludge from the fuel oil 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.

21 *Tanker* means an oil tanker as defined in regulation 1 of Annex I or a chemical tanker as defined in regulation 1 of Annex II of the present Convention.

For the purpose of chapter 4:

22 *Existing ship* means a ship which is not a new ship.

23 *New ship* means a ship:

.1 for which the building contract is placed on or after 1 January 2013; or

.2 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 2013; or

.3 the delivery of which is on or after 1 July 2015.

24 *Major Conversion* means in relation to chapter 4 a conversion of a ship:

.1 which substantially alters the dimensions, carrying capacity or engine power of the ship; or

.2 which changes the type of the ship; or

.3 the intent of which in the opinion of the Administration is substantially to prolong the life of the ship; or

.4 which otherwise so alters the ship that, if it were a new ship, it would become subject to relevant provisions of the present Convention not applicable to it as an existing ship; or

.5 which substantially alters the energy efficiency of the ship and includes any modifications that could cause the ship to exceed the applicable required EEDI as set out in regulation 21.

25 *Bulk carrier* means a ship which is intended primarily to carry dry cargo in bulk, including such types as ore carriers as defined in SOLAS chapter XII, regulation 1, but excluding combination carriers.

26 *Gas carrier* in relation to chapter 4 of this Annex means a cargo ship, other than an LNG carrier as defined in paragraph 38 of this regulation, constructed or adapted and used for the carriage in bulk of any liquefied gas.

27 *Tanker* in relation to chapter 4 means an oil tanker as defined in MARPOL Annex I, regulation 1 or a chemical tanker or an NLS tanker as defined in MARPOL Annex II, regulation 1.

28 *Container ship* means a ship designed exclusively for the carriage of containers in holds and on deck.

29 *General cargo ship* means a ship with a multi-deck or single deck hull designed primarily for the carriage of general cargo. This definition excludes specialized dry cargo ships, which are not included in the calculation of reference lines for general cargo ships, namely livestock carrier, barge carrier, heavy load carrier, yacht carrier, nuclear fuel carrier.

30 *Refrigerated cargo carrier* means a ship designed exclusively for the carriage of refrigerated cargoes in holds.

31 *Combination carrier* means a ship designed to load 100% deadweight with both liquid and dry cargo in bulk.

32 *Passenger ship* means a ship which carries more than 12 passengers.

33 *Ro-ro cargo ship (vehicle carrier)* means a multi deck roll-on-roll-off cargo ship designed for the carriage of empty cars and trucks.

34 *Ro-ro cargo ship* means a ship designed for the carriage of roll-on-roll-off cargo transportation units.

35 *Ro-ro passenger ship* means a passenger ship with roll-on-roll-off cargo spaces.

36 *Attained EEDI* is the EEDI value achieved by an individual ship in accordance with regulation 20 of chapter 4.

37 *Required EEDI* is the maximum value of attained EEDI that is allowed by regulation 21 of chapter 4 for the specific ship type and size.

38 *LNG carrier* in relation to chapter 4 of this Annex means a cargo ship constructed or adapted and used for the carriage in bulk of liquefied natural gas (LNG).

39 *Cruise passenger ship* in relation to chapter 4 of this Annex means a passenger ship not having a cargo deck, designed exclusively for commercial transportation of passengers in overnight accommodations on a sea voyage.

40 *Conventional propulsion* in relation to chapter 4 of this Annex means a method of propulsion where a main reciprocating internal combustion engine(s) is the prime mover and coupled to a propulsion shaft either directly or through a gear box.

41 *Non-conventional propulsion* in relation to chapter 4 of this Annex means a method of propulsion, other than conventional propulsion, including diesel-electric propulsion, turbine propulsion, and hybrid propulsion systems.

42 *Cargo ship having ice-breaking capability* in relation to chapter 4 of this Annex means a cargo ship which is designed to break level ice independently with a speed of at least 2 knots when the level ice thickness is 1.0 m or more having ice bending strength of at least 500 kPa.

43 *A ship delivered on or after 1 September 2019* means a ship:

- .1 for which the building contract is placed on or after 1 September 2015; or
- .2 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 March 2016; or
- .3 the delivery of which is on or after 1 September 2019.

For the purposes of this annex:

44 *Audit* means a systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which audit criteria are fulfilled.

45 *Audit Scheme* means the IMO Member State Audit Scheme established by the Organization and taking into account the guidelines developed by the Organization.

46 *Code for Implementation* means the IMO Instruments Implementation Code (III Code) adopted by the Organization by resolution A.1070(28).

47 *Audit Standard* means the Code for Implementation.

Regulation 3 *Exceptions and Exemptions*

General

- 1 Regulations of this Annex shall not apply to:
 - .1 any emission necessary for the purpose of securing the safety of a ship or saving life at sea; or
 - .2 any emission resulting from damage to a ship or its equipment:
 - .2.1 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
 - .2.2 except if the owner or the master acted either with intent to cause damage, or recklessly and with knowledge that damage would probably result.

Trials for Ship Emission Reduction and Control Technology Research

2 The Administration of a Party may, in co-operation with other Administrations as appropriate, issue an exemption from specific provisions of this Annex for a ship to conduct trials for the development of ship emission reduction and control technologies and engine design programmes. Such an exemption shall only be provided if the applications of specific provisions of the Annex or the revised NO_x Technical Code 2008 could impede research into the development of such technologies or programmes. A permit for such an exemption shall only be provided to the minimum number of ships necessary and be subject to the following provisions:

- .1 for marine diesel engines with a per cylinder displacement up to 30 litres, the duration of the sea trial shall not exceed 18 months. If additional time is required, a permitting Administration or Administrations may permit a renewal for one additional 18-month period; or
- .2 for marine diesel engines with a per cylinder displacement at or above 30 litres, the duration of the ship trial shall not exceed 5 years and shall require a progress review by the permitting Administration or Administrations at each intermediate survey. A permit may be withdrawn based on this review if the testing has not adhered to the conditions of the permit or if it is determined that the technology or programme is not likely to produce effective results in the reduction and control of ship emissions. If the reviewing Administration or Administrations determine that additional time is required to conduct a test of a particular technology or programme, a permit may be renewed for an additional time period not to exceed five years.

Emissions from Sea-bed Mineral Activities

3.1 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:

- .1 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;
- .2 the release of gases and volatile compounds entrained in drilling fluids and cuttings;
- .3 emissions associated solely and directly with the treatment, handling, or storage of sea-bed minerals; and
- .4 emissions from marine diesel engines that are solely dedicated to the exploration, exploitation and associated offshore processing of sea-bed mineral resources.

3.2 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.

Regulation 4

Equivalents

1 The Administration of a Party may allow any fitting, material, appliance or apparatus to be fitted in a ship or other procedures, alternative fuel oils, or compliance methods used as an alternative to that required by this Annex if such fitting, material, appliance or apparatus or other procedures, alternative fuel oils, or compliance methods are at least as effective in terms of emissions reductions as that required by this Annex, including any of the standards set forth in regulations 13 and 14.

2 The Administration of a Party which allows a fitting, material, appliance or apparatus or other procedures, alternative fuel oils, or compliance methods used as an alternative to that required by this Annex shall communicate to the Organization for circulation to the Parties particulars thereof, for their information and appropriate action, if any.

3 The Administration of a Party should take into account any relevant guidelines developed by the Organization pertaining to the equivalents provided for in this regulation.

4 The Administration of a Party which allows the use of an equivalent as set forth in paragraph 1 of this regulation shall endeavour not to impair or damage its environment, human health, property, or resources or those of other States.

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:

- .1 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;
- .2 A renewal survey at intervals specified by the Administration, but not exceeding five years, except where regulation 9.2, 9.5, 9.6 or 9.7 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 applicable requirements of this Annex;
- .3 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 1.4 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;
- .4 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 1.1 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
- .5 An additional survey either general or partial, according to the circumstances, shall be made whenever any important repairs or renewals are made as prescribed in paragraph 4 of this regulation or after a repair resulting from investigations prescribed in paragraph 5 of this regulation. 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 Surveys of ships as regards the enforcement of the provisions of this Annex shall be carried out by officers of the Administration.

- .1 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;
- .2 The survey of marine diesel engines and equipment for compliance with regulation 13 of this Annex shall be conducted in accordance with the revised NO_x Technical Code 2008;
- .3 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 shall 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; and
- .4 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 Ships to which chapter 4 applies shall also be subject to the surveys specified below, taking into account Guidelines adopted by the Organization:

- .1 An initial survey before a new ship is put in service and before the International Energy Efficiency Certificate is issued. The survey shall verify that the ship's attained EEDI is in accordance with the requirements in chapter 4, and that the SEEMP required by regulation 22 is on board;
- .2 A general or partial survey, according to the circumstances, after a major conversion of a new ship to which this regulation applies. The survey shall ensure that the attained EEDI is recalculated as necessary and meets the requirement of regulation 21, with the reduction factor applicable to the ship type and size of the converted ship in the phase corresponding to the date of contract or keel laying or delivery determined for the original ship in accordance with regulation 2.23;
- .3 In cases where the major conversion of a new or existing ship is so extensive that the ship is regarded by the Administration as a newly constructed ship, the Administration shall determine the necessity of an initial survey on attained EEDI. Such a survey, if determined necessary, shall ensure that the attained EEDI is calculated and meets the requirement of regulation 21, with the reduction factor applicable corresponding to the ship type and size of the converted ship at the date of the contract of the conversion, or in the absence of a contract, the commencement date of the conversion. The survey shall also verify that the SEEMP required by regulation 22 is on board; and

.4 For existing ships, the verification of the requirement to have a SEEMP on board according to regulation 22 shall take place at the first intermediate or renewal survey identified in paragraph 1 of this regulation, whichever is the first, on or after 1 January 2013.

5 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.

6 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 a Certificate

International Air Pollution Prevention 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:

- .1 any ship of 400 gross tonnage and above engaged in voyages to ports or offshore terminals under the jurisdiction of other Parties; and
- .2 platforms and drilling rigs engaged in voyages to waters under the sovereignty or jurisdiction of other Parties.

2 A ship constructed before the date Annex VI enters into force for that particular ship's Administration, shall be issued with an International Air Pollution Prevention Certificate in accordance with paragraph 1 of this regulation no later than the first scheduled dry-docking after the date of such entry into force, but in no case later than three years after this date.

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.

International Energy Efficiency Certificate

4 An International Energy Efficiency Certificate for the ship shall be issued after a survey in accordance with the provisions of regulation 5.4 to any ship of 400 gross tonnage and above before that ship may engage in voyages to ports or offshore terminals under the jurisdiction of other Parties.

5 The certificate shall be issued or endorsed either by the Administration or any organization duly authorized by it. In every case, the Administration assumes full responsibility for the certificate.

Regulation 7

Issue of a Certificate by another Party

1 A Party may, at the request of the Administration, cause a ship to be surveyed and, if satisfied that the applicable provisions of this Annex are complied with, shall issue or authorize the issuance of an International Air Pollution Prevention Certificate or an International Energy Efficiency Certificate to the ship, and where appropriate, endorse or authorize the endorsement of such certificates 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 or International Energy Efficiency Certificate shall be issued to a ship which is entitled to fly the flag of a State which is not a Party.

Regulation 8

Form of Certificate

International Air Pollution Prevention Certificate

1 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 a dispute or discrepancy.

International Energy Efficiency Certificate

2 The International Energy Efficiency Certificate shall be drawn up in a form corresponding to the model given in appendix VIII to this Annex and shall be at least in English, French or Spanish. If an official language of the issuing Party is also used, this shall prevail in case of a dispute or discrepancy.

Regulation 9

Duration and Validity of Certificate

International Air Pollution Prevention 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 Notwithstanding the requirements of paragraph 1 of this regulation:

- .1 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;

- .2 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; and
- .3 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 regulations 5.1.3 and 5.1.4 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 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 2.1, 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:

- .1 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;

- .2 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; and
- .3 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:

- .1 if the relevant surveys are not completed within the periods specified under regulation 5.1 of this Annex;
- .2 if the certificate is not endorsed in accordance with regulation 5.1.3 or 5.1.4 of this Annex; and
- .3 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 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.

International Energy Efficiency Certificate

10 The International Energy Efficiency Certificate shall be valid throughout the life of the ship subject to the provisions of paragraph 11 below.

11 An International Energy Efficiency Certificate issued under this Annex shall cease to be valid in any of the following cases:

- .1 if the ship is withdrawn from service or if a new certificate is issued following major conversion of the ship; or
- .2 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 chapter 4. 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

1 A ship, when in a port or an offshore terminal under the jurisdiction of another Party, 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 to 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.

5 In relation to chapter 4, any port State inspection shall be limited to verifying, when appropriate, that there is a valid International Energy Efficiency Certificate on board, in accordance with article 5 of the Convention.

Regulation 11

Detection of Violations and Enforcement

1 Parties 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 this 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 This regulation does not apply to permanently sealed equipment where there are no refrigerant charging connections or potentially removable components containing ozone depleting substances.

2 Subject to the provisions of regulation 3.1, 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.

3.1 Installations which contain ozone depleting substances, other than hydro-chlorofluorocarbons, shall be prohibited:

- .1 on ships constructed on or after 19 May 2005; or
- .2 in the case of ships constructed before 19 May 2005, which have a contractual delivery date of the equipment to the ship on or after 19 May 2005 or, in the absence of a contractual delivery date, the actual delivery of the equipment to the ship on or after 19 May 2005.

3.2 Installations which contain hydro-chlorofluorocarbons shall be prohibited:

- .1 on ships constructed on or after 1 January 2020; or
- .2 in the case of ships constructed before 1 January 2020, which have a contractual delivery date of the equipment to the ship on or after 1 January 2020 or, in the absence of a contractual delivery date, the actual delivery of the equipment to the ship on or after 1 January 2020.

4 The substances referred to in this regulation, and equipment containing such substances, shall be delivered to appropriate reception facilities when removed from ships.

5 Each ship subject to regulation 6.1 shall maintain a list of equipment containing ozone depleting substances.

6 Each ship subject to regulation 6.1 which has rechargeable systems that contain ozone depleting substances shall maintain an Ozone Depleting Substances Record Book. This Record Book may form part of an existing log-book or electronic recording system as approved by the Administration.

7 Entries in the Ozone Depleting Substances Record Book shall be recorded in terms of mass (kg) of substance and shall be completed without delay on each occasion, in respect of the following:

- .1 recharge, full or partial, of equipment containing ozone depleting substances;
- .2 repair or maintenance of equipment containing ozone depleting substances;
- .3 discharge of ozone depleting substances to the atmosphere:
 - .3.1 deliberate; and
 - .3.2 non-deliberate;
- .4 discharge of ozone depleting substances to land-based reception facilities; and
- .5 supply of ozone depleting substances to the ship.

Regulation 13

Nitrogen Oxides (NO_x)

Application

1.1 This regulation shall apply to:

- .1 each marine diesel engine with a power output of more than 130 kW installed on a ship; and
- .2 each marine diesel engine with a power output of more than 130 kW which undergoes a major conversion on or after 1 January 2000 except when demonstrated to the satisfaction of the Administration that such engine is an identical replacement to the engine which it is replacing and is otherwise not covered under paragraph 1.1.1 of this regulation.

1.2 This regulation does not apply to:

- .1 a marine diesel engine intended to be used solely for emergencies, or solely to power any device or equipment intended to be used solely for emergencies on the ship on which it is installed, or a marine diesel engine installed in lifeboats intended to be used solely for emergencies; and
- .2 a marine diesel engine installed on a ship 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 engine is subject to an alternative NO_x control measure established by the Administration.

1.3 Notwithstanding the provisions of subparagraph 1.1 of this paragraph, the Administration may provide an exclusion from the application of this regulation for any marine diesel engine which is installed on a ship constructed, or for any marine diesel engine which undergoes a major conversion, before 19 May 2005, provided that the ship on which the engine is installed is solely engaged in voyages to ports or offshore terminals within the State the flag of which the ship is entitled to fly.

Major Conversion

2.1 For the purpose of this regulation, *major conversion* means a modification on or after 1 January 2000 of a marine diesel engine that has not already been certified to the standards set forth in paragraph 3, 4, or 5.1.1 of this regulation where:

- .1 the engine is replaced by a marine diesel engine or an additional marine diesel engine is installed, or
- .2 any substantial modification, as defined in the revised NO_x Technical Code 2008, is made to the engine, or
- .3 the maximum continuous rating of the engine is increased by more than 10% compared to the maximum continuous rating of the original certification of the engine.

2.2 For a major conversion involving the replacement of a marine diesel engine with a non-identical marine diesel engine, or the installation of an additional marine diesel engine, the standards in this regulation at the time of the replacement or addition of the engine shall apply. In the case of replacement engines only, if it is not possible for such a replacement engine to meet the standards set forth in paragraph 5.1.1 of this regulation (Tier III, as applicable), then that replacement engine shall meet the standards set forth in paragraph 4 of this regulation (Tier II), taking into account guidelines developed by the Organization.

2.3 A marine diesel engine referred to in paragraph 2.1.2 or 2.1.3 shall meet the following standards:

- .1 for ships constructed prior to 1 January 2000, the standards set forth in paragraph 3 of this regulation shall apply; and
- .2 for ships constructed on or after 1 January 2000, the standards in force at the time the ship was constructed shall apply.

Tier I

3 Subject to regulation 3 of this Annex, the operation of a marine diesel engine which is installed on a ship constructed on or after 1 January 2000 and prior to 1 January 2011 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, where n = rated engine speed (crankshaft revolutions per minute):

- .1 17.0 g/kWh when n is less than 130 rpm;
- .2 $45 \cdot n^{(-0.2)}$ g/kWh when n is 130 or more but less than 2,000 rpm;
- .3 9.8 g/kWh when n is 2,000 rpm or more.

Tier II

4 Subject to regulation 3 of this Annex, the operation of a marine diesel engine which is installed on a ship constructed on or after 1 January 2011 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, where n = rated engine speed (crankshaft revolutions per minute):

- .1 14.4 g/kWh when n is less than 130 rpm;
- .2 $44 \cdot n^{(-0.23)}$ g/kWh when n is 130 or more but less than 2,000 rpm;
- .3 7.7 g/kWh when n is 2,000 rpm or more.

Tier III

5.1 Subject to regulation 3 of this Annex, in an emission control area designated for Tier III NO_x control under paragraph 6 of this regulation, the operation of a marine diesel engine that is installed on a ship:

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

- .1 3.4 g/kWh when n is less than 130 rpm;
- .2 $9 \cdot n^{(-0.2)}$ g/kWh when n is 130 or more but less than 2,000 rpm;
- .3 2.0 g/kWh when n is 2,000 rpm or more;

when:

.2 that ship is constructed on or after 1 January 2016 and is operating in the North American Emission Control Area or the United States Caribbean Sea Emission Control Area;

when:

.3 that ship is operating in an emission control area designated for Tier III NO_x control under paragraph 6 of this regulation, other than an emission control area described in paragraph 5.1.2 of this regulation, and is constructed on or after the date of adoption of such an emission control area, or a later date as may be specified in the amendment designating the NO_x Tier III emission control area, whichever is later.

5.2 The standards set forth in paragraph 5.1.1 of this regulation shall not apply to:

.1 a marine diesel engine installed on a ship with a length (L), as defined in regulation 1.19 of Annex I to the present Convention, of less than 24 metres when it has been specifically designed, and is used solely, for recreational purposes; or

.2 a marine diesel engine installed on a ship with a combined nameplate diesel engine propulsion power of less than 750 kW if it is demonstrated, to the satisfaction of the Administration, that the ship cannot comply with the standards set forth in paragraph 5.1.1 of this regulation because of design or construction limitations of the ship; or

.3 a marine diesel engine installed on a ship constructed prior to 1 January 2021 of less than 500 gross tonnage, with a length (L), as defined in regulation 1.19 of Annex I to the present convention, of 24 m or over when it has been specifically designed, and is used solely, for recreational purposes.

Emission Control Area

6 For the purpose of this regulation, emission control areas shall be:

.1 the North American area, which means the area described by the coordinates provided in Appendix VII to this Annex;

.2 the United States Caribbean Sea area, which means the area described by the coordinates provided in Appendix VII to this Annex; and

.3 any other sea area, including any port area, designated by the Organization in accordance with the criteria and procedures set forth in Appendix III to this Annex.

Marine Diesel Engines Installed on a Ship Constructed Prior to 1 January 2000

7.1 Notwithstanding paragraph 1.1.1 of this regulation, a marine diesel engine with a power output of more than 5,000 kW and a per cylinder displacement at or above 90 litres installed on a ship constructed on or after 1 January 1990 but prior to 1 January 2000 shall comply with the emission limits set forth in subparagraph 7.4 of this paragraph, provided that an Approved Method for that engine has been certified by an Administration of a Party and notification of such certification has been submitted to the Organization by the certifying Administration. Compliance with this paragraph shall be demonstrated through one of the following:

.1 installation of the certified Approved Method, as confirmed by a survey using the verification procedure specified in the Approved Method File, including appropriate notation on the ship's International Air Pollution Prevention Certificate of the presence of the Approved Method; or

.2 certification of the engine confirming that it operates within the limits set forth in paragraph 3, 4, or 5.1.1 of this regulation and an appropriate notation of the engine certification on the ship's International Air Pollution Prevention Certificate.

7.2 Subparagraph 7.1 shall apply no later than the first renewal survey that occurs 12 months or more after deposit of the notification in subparagraph 7.1. If a shipowner of a ship on which an Approved Method is to be installed can demonstrate to the satisfaction of the Administration that the Approved Method was not commercially available despite best efforts to obtain it, then that Approved Method shall be installed on the ship no later than the next annual survey of that ship which falls after the Approved Method is commercially available.

7.3 With regard to a marine diesel engine with a power output of more than 5,000 kW and a per cylinder displacement at or above 90 litres installed on a ship constructed on or after 1 January 1990, but prior to 1 January 2000, the International Air Pollution Prevention Certificate shall, for a marine diesel engine to which paragraph 7.1 of this regulation applies, indicate one of the following:

- .1 an approved method has been applied pursuant to paragraph 7.1.1 of this regulation;
- .2 the engine has been certified pursuant to paragraph 7.1.2 of this regulation;
- .3 an approved method is not yet commercially available as described in paragraph 7.2 of this regulation; or
- .4 an approved method is not applicable.

7.4 Subject to regulation 3 of this Annex, the operation of a marine diesel engine described in subparagraph 7.1 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, where n = rated engine speed (crankshaft revolutions per minute):

- .1 17.0 g/kWh when n is less than 130 rpm;
- .2 $45 \cdot n^{(-0.2)}$ g/kWh when n is 130 or more but less than 2,000 rpm; and
- .3 9.8 g/kWh when n is 2,000 rpm or more.

7.5 Certification of an Approved Method shall be in accordance with chapter 7 of the revised NO_x Technical Code 2008 and shall include verification:

- .1 by the designer of the base marine diesel engine to which the Approved Method applies that the calculated effect of the Approved Method will not decrease engine rating by more than 1.0%, increase fuel consumption by more than 2.0% as measured according to the appropriate test cycle set forth in the revised NO_x Technical Code 2008, or adversely affect engine durability or reliability; and
- .2 that the cost of the Approved Method is not excessive, which is determined by a comparison of the amount of NO_x reduced by the Approved Method to achieve the standard set forth in subparagraph 7.4 of this paragraph and the cost of purchasing and installing such Approved Method.

Certification

8 The revised NO_x Technical Code 2008 shall be applied in the certification, testing, and measurement procedures for the standards set forth in this regulation.

9 The procedures for determining NO_x emissions set out in the revised NO_x Technical Code 2008 are intended to be representative of the normal operation of the engine. Defeat devices and irrational emission control strategies undermine this intention and shall not be allowed. This regulation shall not prevent the use of auxiliary control devices that are used to protect the engine and/or its ancillary equipment against operating conditions that could result in damage or failure or that are used to facilitate the starting of the engine.

Regulation 14
Sulphur Oxides (SO_x) and Particulate Matter

General Requirements

- 1 The sulphur content of any fuel oil used on board ships shall not exceed the following limits:
 - .1 4.50% m/m prior to 1 January 2012;
 - .2 3.50% m/m on and after 1 January 2012; and
 - .3 0.50% m/m on and after 1 January 2020.
- 2 The worldwide average sulphur content of residual fuel oil supplied for use on board ships shall be monitored taking into account guidelines developed by the Organization.

Requirements within Emission Control Areas

- 3 For the purpose of this regulation, emission control areas shall include:
 - .1 the Baltic Sea area as defined in regulation 1.11.2 of Annex I and the North Sea area as defined in regulation 1.14.6 of Annex V;
 - .2 the North American area as described by the coordinates provided in Appendix VII to this Annex;
 - .3 the United States Caribbean Sea area as described by the coordinates provided in Appendix VII to this Annex; and
 - .4 any other sea area, including any port area, designated by the Organization in accordance with the criteria and procedures set forth in Appendix III to this Annex.
- 4 While ships are operating within an Emission Control Area, the sulphur content of fuel oil used on board ships shall not exceed the following limits:
 - .1 1.50% m/m prior to 1 July 2010;
 - .2 1.00% m/m on and after 1 July 2010; and
 - .3 0.10% m/m on and after 1 January 2015.
 - .4 Prior to 1 January 2020, the sulphur content of fuel oil referred to in paragraph 4 of this regulation shall not apply to ships operating in the North American area or the United States Caribbean Sea area defined in paragraph 3, built on or before 1 August 2011 that are powered by propulsion boilers that were not originally designed for continued operation on marine distillate fuel or natural gas.
- 5 The sulphur content of fuel oil referred to in paragraph 1 and paragraph 4 of this regulation shall be documented by its supplier as required by regulation 18 of this Annex.

6 Those ships using separate fuel oils to comply with paragraph 4 of this regulation and entering or leaving an Emission Control Area set forth in paragraph 3 of this regulation shall carry a written procedure showing how the fuel oil change-over is to be done, allowing sufficient time for the fuel oil service system to be fully flushed of all fuel oils exceeding the applicable sulphur content specified in paragraph 4 of this regulation prior to entry into an Emission Control Area. The volume of low sulphur fuel oils in each tank as well as the date, time, and position of the ship when any fuel-oil-change-over operation is completed prior to the entry into an Emission Control Area or commenced after exit from such an area, shall be recorded in such log-book as prescribed by the Administration.

7 During the first twelve months immediately following entry into force of an amendment designating a specific emission control area under paragraph 3 of this regulation, ships operating in that emission control area are exempt 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 of this regulation.

Review Provision

8 A review of the standard set forth in subparagraph 1.3 of this regulation shall be completed by 2018 to determine the availability of fuel oil to comply with the fuel oil standard set forth in that paragraph and shall take into account the following elements:

- .1 the global market supply and demand for fuel oil to comply with paragraph 1.3 of this regulation that exist at the time that the review is conducted;
- .2 an analysis of the trends in fuel oil markets; and
- .3 any other relevant issue.

9 The Organization shall establish a group of experts, comprising of representatives with the appropriate expertise in the fuel oil market and appropriate maritime, environmental, scientific, and legal expertise, to conduct the review referred to in paragraph 8 of this regulation. The group of experts shall develop the appropriate information to inform the decision to be taken by the Parties.

10 The Parties, based on the information developed by the group of experts, may decide whether it is possible for ships to comply with the date in paragraph 1.3 of this regulation. If a decision is taken that it is not possible for ships to comply, then the standard in that subparagraph shall become effective on 1 January 2025.

Regulation 15

Volatile Organic Compounds (VOCs)

1 If the emissions of VOCs from a tanker are to be regulated in a port or ports or a terminal or terminals under the jurisdiction of a Party, they shall be regulated in accordance with the provisions of this regulation.

2 A Party regulating tankers for VOC emissions shall submit a notification to the Organization. This notification shall include information on the size of tankers to be controlled, the 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 A Party 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 Party taking into account the safety standards for such systems developed by the Organization, are provided in any designated port and terminal and are operated safely and in a manner so as to avoid undue delay to a ship.

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

5 A tanker to which paragraph 1 of this regulation applies shall be provided with a vapour emission collection system approved by the Administration taking into account the safety standards for such systems developed by the Organization, and shall use this system during the loading of relevant cargoes. A port or terminal which has installed vapour emission control systems in accordance with this regulation may accept tankers which are not fitted with vapour collection systems for a period of three years after the effective date identified in paragraph 2 of this regulation.

6 A tanker carrying crude oil shall have on board and implement a VOC Management Plan approved by the Administration. Such a plan shall be prepared taking into account the guidelines developed by the Organization. The plan shall be specific to each ship and shall at least:

- .1 provide written procedures for minimizing VOC emissions during the loading, sea passage and discharge of cargo;
- .2 give consideration to the additional VOC generated by crude oil washing;
- .3 identify a person responsible for implementing the plan; and
- .4 for ships on international voyages, be written in the working language of the master and officers and, if the working language of the master and officers is not English, French, or Spanish, include a translation into one of these languages.

7 This regulation shall also apply to gas carriers only if 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 4 of this regulation, shipboard incineration shall be allowed only in a shipboard incinerator.

2 Shipboard incineration of the following substances shall be prohibited:

- .1 residues of cargoes subject to Annex I, II or III or related contaminated packing materials;
- .2 polychlorinated biphenyls (PCBs);

- .3 garbage, as defined by Annex V, containing more than traces of heavy metals;
- .4 refined petroleum products containing halogen compounds;
- .5 sewage sludge and sludge oil either of which are not generated on board the ship; and
- .6 exhaust gas cleaning system residues.

3 Shipboard incineration of polyvinyl chlorides (PVCs) shall be prohibited, except in shipboard incinerator for which an IMO Type Approval Certificate has been issued.

4 Shipboard incineration of sewage sludge and sludge oil generated during 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.

5 Nothing in this regulation neither:

- .1 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, and the 1996 Protocol thereto, nor
- .2 precludes the development, installation and operation of alternative design shipboard thermal waste treatment devices that meet or exceed the requirements of this regulation.

6.1 Except as provided in subparagraph 6.2 of this paragraph, each incinerator on a ship constructed on or after 1 January 2000 or incinerator which is installed on board a ship on or after 1 January 2000 shall meet the requirements contained in appendix IV to this Annex. Each incinerator subject to this subparagraph shall be approved by the Administration taking into account the standard specification for shipboard incinerators developed by the Organization; or

6.2 The Administration may allow exclusion from the application of subparagraph 6.1 of this paragraph to any incinerator which is installed on board a ship before 19 May 2005, 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.

7 Incinerators installed in accordance with the requirements of paragraph 6.1 of this regulation shall be provided with a manufacturer's operating manual which is to be retained with the unit and which shall specify how to operate the incinerator within the limits described in paragraph 2 of appendix IV of this Annex.

8 Personnel responsible for the operation of an incinerator installed in accordance with the requirements of paragraph 6.1 of this regulation shall be trained to implement the guidance provided in the manufacturer's operating manual as required by paragraph 7 of this regulation.

9 For incinerators installed in accordance with the requirements of paragraph 6.1 of this regulation the combustion chamber gas outlet temperature shall be monitored at all times the unit is in operation. Where that incinerator is of the continuous-feed type, waste shall not be fed into the unit when the combustion chamber gas outlet temperature is below 850°C. Where that incinerator is of the batch-loaded type, the unit shall be designed so that the combustion chamber gas outlet temperature shall reach 600°C within five minutes after start-up and will thereafter stabilize at a temperature not less than 850°C.

Regulation 17

Reception Facilities

- 1 Each Party undertakes to ensure the provision of facilities adequate to meet the:
 - .1 needs of ships using its repair ports for the reception of ozone depleting substances and equipment containing such substances when removed from ships;
 - .2 needs of ships using its ports, terminals or repair ports for the reception of exhaust gas cleaning residues from an exhaust gas cleaning system,

without causing undue delay to ships; and
 - .3 needs in ship-breaking facilities for the reception of ozone depleting substances and equipment containing such substances when removed from ships.

1bis Small Island Developing States may satisfy the requirements in paragraph 1 of this regulation through regional arrangements when, because of those States' unique circumstances, such arrangements are the only practical means to satisfy these requirements. Parties participating in a regional arrangement shall develop a Regional Reception Facilities Plan, taking into account the guidelines developed by the Organization.

2 If a particular port or terminal of a Party is – taking into account the guidelines to be developed by the Organization – remotely located from, or lacking in, the industrial infrastructure necessary to manage and process those substances referred to in paragraph 1 of this regulation and therefore cannot accept such substances, then the Party shall inform the Organization of any such port or terminal so that this information may be circulated to all Parties and Member States of the Organization for their information and any appropriate action. Each Party that has provided the Organization with such information shall also notify the Organization of its ports and terminals where reception facilities are available to manage and process such substances.

3 Each Party 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 Availability and Quality

Fuel Oil Availability

1 Each Party shall take all reasonable steps to promote the availability of fuel oils which comply with this Annex and inform the Organization of the availability of compliant fuel oils in its ports and terminals.

2.1 If a ship is found by a Party not to be in compliance with the standards for compliant fuel oils set forth in this Annex, the competent authority of the Party is entitled to require the ship to:

- .1 present a record of the actions taken to attempt to achieve compliance; and
- .2 provide evidence that it attempted to purchase compliant fuel oil in accordance with its voyage plan and, if it was not made available where planned, that attempts were made to locate alternative sources for such fuel oil and that despite best efforts to obtain compliant fuel oil, no such fuel oil was made available for purchase.

2.2 The ship should not be required to deviate from its intended voyage or to delay unduly the voyage in order to achieve compliance.

2.3 If a ship provides the information set forth in subparagraph 2.1 of this paragraph, a Party shall take into account all relevant circumstances and the evidence presented to determine the appropriate action to take, including not taking control measures.

2.4 A ship shall notify its Administration and the competent authority of the relevant port of destination when it cannot purchase compliant fuel oil.

2.5 A Party shall notify the Organization when a ship has presented evidence of the non-availability of compliant fuel oil.

Fuel Oil Quality

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

- .1 except as provided in subparagraph 3.2:
 - .1.1 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;
 - .1.2 the fuel oil shall be free from inorganic acid; and
 - .1.3 the fuel oil shall not include any added substance or chemical waste which:
 - .1.3.1 jeopardizes the safety of ships or adversely affects the performance of the machinery, or

.1.3.2 is harmful to personnel, or

.1.3.3 contributes overall to additional air pollution.

.2 fuel oil for combustion purposes derived by methods other than petroleum refining shall not:

.2.1 exceed the applicable sulphur content set forth in regulation 14 of this Annex;

.2.2 cause an engine to exceed the applicable NO_x emission limit set forth in paragraphs 3, 4, 5.1.1 and 7.4 of regulation 13;

.2.3 contain inorganic acid; or

.2.4.1 jeopardize the safety of ships or adversely affect the performance of the machinery, or

.2.4.2 be harmful to personnel, or

.2.4.3 contribute overall to additional air pollution.

4 This regulation does not apply to coal in its solid form or nuclear fuels. Paragraphs 5, 6, 7.1, 7.2, 8.1, 8.2, 9.2, 9.3, and 9.4 of this regulation do not apply to gas fuels such as Liquefied Natural Gas, Compressed Natural Gas or Liquefied Petroleum Gas. The sulphur content of gas fuels delivered to a ship specifically for combustion purposes on board that ship shall be documented by the supplier.

5 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.

6 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.

7.1 The competent authority of a Party 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.

7.2 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.

8.1 The bunker delivery note shall be accompanied by a representative sample of the fuel oil delivered taking into account guidelines 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.

8.2 If an Administration requires the representative sample to be analysed, it shall be done in accordance with the verification procedure set forth in appendix VI to determine whether the fuel oil meets the requirements of this Annex.

9 Parties undertake to ensure that appropriate authorities designated by them:

- .1 maintain a register of local suppliers of fuel oil;
- .2 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;
- .3 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;
- .4 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;
- .5 inform the Administration of any ship receiving fuel oil found to be non-compliant with the requirements of regulation 14 or 18 of this Annex; and
- .6 inform the Organization for transmission to Parties and Member States of the Organization of all cases where fuel oil suppliers have failed to meet the requirements specified in regulations 14 or 18 of this Annex.

10 In connection with port State inspections carried out by Parties, the Parties further undertake to:

- .1 inform the Party or non-Party under whose jurisdiction a bunker delivery note was issued of cases of delivery of noncompliant fuel oil, giving all relevant information; and
- .2 ensure that remedial action as appropriate is taken to bring noncompliant fuel oil discovered into compliance.

11 For every ship of 400 gross tonnage and above on scheduled services with frequent and regular port calls, an Administration may decide after application and consultation with affected States that compliance with paragraph 6 of this regulation may be documented in an alternative manner which gives similar certainty of compliance with regulations 14 and 18 of this Annex.

CHAPTER IV
REGULATIONS ON ENERGY EFFICIENCY FOR SHIPS

Regulation 19

Application

- 1 This chapter shall apply to all ships of 400 gross tonnage and above.
- 2 The provisions of this chapter shall not apply to:
 - .1 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. However, each Party should ensure, by the adoption of appropriate measures, that such ships are constructed and act in a manner consistent with chapter 4, so far as is reasonable and practicable.
 - .2 ships not propelled by mechanical means, and platforms including FPSOs and FSUs and drilling rigs, regardless of their propulsion.
- 3 Regulations 20 and 21 of this Annex shall not apply to ships which have non-conventional propulsion, except that regulations 20 and 21 shall apply to cruise passenger ships having non-conventional propulsion and LNG carriers having conventional or non-conventional propulsion, delivered on or after 1 September 2019, as defined in paragraph 43 of regulation 2. Regulations 20 and 21 shall not apply to cargo ships having ice-breaking capability.
- 4 Notwithstanding the provisions of paragraph 1 of this regulation, the Administration may waive the requirement for a ship of 400 gross tonnage and above from complying with regulation 20 and regulation 21.
- 5 The provision of paragraph 4 of this regulation shall not apply to ships of 400 gross tonnage and above:
 - .1 for which the building contract is placed on or after 1 January 2017; or
 - .2 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
 - .3 the delivery of which is on or after 1 July 2019; or
 - .4 in cases of a major conversion of a new or existing ship, as defined in regulation 2.24, on or after 1 January 2017, and in which regulation 5.4.2 and regulation 5.4.3 of chapter 2 apply.
- 6 The Administration of a Party to the present Convention which allows application of paragraph 4, or suspends, withdraws or declines the application of that paragraph, to a ship entitled to fly its flag shall forthwith communicate to the Organization for circulation to the Parties to the present Protocol particulars thereof, for their information.

Regulation 20

Attained Energy Efficiency Design Index (Attained EEDI)

- 1 The attained EEDI shall be calculated for:
 - .1 each new ship;
 - .2 each new ship which has undergone a major conversion; and
 - .3 each new or existing ship which has undergone a major conversion, that is so extensive that the ship is regarded by the Administration as a newly-constructed ship,

which falls into one or more of the categories in regulations 2.25 to 2.35, 2.38 and 2.39 of this Annex. The attained EEDI shall be specific to each ship and shall indicate the estimated performance of the ship in terms of energy efficiency, and be accompanied by the EEDI technical file that contains the information necessary for the calculation of the attained EEDI and that shows the process of calculation. The attained EEDI shall be verified, based on the EEDI technical file, either by the Administration or by any organization duly authorized by it.

- 2 The attained EEDI shall be calculated taking into account guidelines developed by the Organization.

Regulation 21

Required EEDI

- 1 For each:
 - .1 new ship;
 - .2 new ship which has undergone a major conversion; and
 - .3 new or existing ship which has undergone a major conversion that is so extensive that the ship is regarded by the Administration as a newly-constructed ship,

which falls into one of the categories in regulations 2.25 to 2.31, 2.33 to 2.35, 2.38 and 2.39 and to which this chapter is applicable, the attained EEDI shall be as follows:

$$\text{Attained EEDI} \leq \text{Required EEDI} = (1-X/100) \times \text{reference line value}$$

where X is the reduction factor specified in table 1 for the required EEDI compared to the EEDI reference line.

- 2 For each new and existing ship that has undergone a major conversion which is so extensive that the ship is regarded by the Administration as a newly constructed ship, the attained EEDI shall be calculated and meet the requirement of paragraph 21.1 with the reduction factor applicable corresponding to the ship type and size of the converted ship at the date of the contract of the conversion, or in the absence of a contract, the commencement date of the conversion.

Table 1. Reduction factors (in percentage) for the EEDI relative to the EEDI Reference line

Ship Type	Size	Phase 0 1 Jan 2013 – 31 Dec 2014	Phase 1 1 Jan 2015 – 31 Dec 2019	Phase 2 1 Jan 2020 – 31 Dec 2024	Phase 3 1 Jan 2025 and onwards
Bulk carrier	20,000 DWT and above	0	10	20	30
	10,000 – 20,000 DWT	n/a	0-10*	0-20*	0-30*
Gas carrier	10,000 DWT and above	0	10	20	30
	2,000 – 10,000 DWT	n/a	0-10*	0-20*	0-30*
Tanker	20,000 DWT and above	0	10	20	30
	4,000 – 20,000 DWT	n/a	0-10*	0-20*	0-30*
Container ship	15,000 DWT and above	0	10	20	30
	10,000 – 15,000 DWT	n/a	0-10*	0-20*	0-30*
General Cargo ships	15,000 DWT and above	0	10	15	30
	3,000 – 15,000 DWT	n/a	0-10*	0-15*	0-30*
Refrigerated cargo carrier	5,000 DWT and above	0	10	15	30
	3,000 – 5,000 DWT	n/a	0-10*	0-15*	0-30*
Combination carrier	20,000 DWT and above	0	10	20	30
	4,000 – 20,000 DWT	n/a	0-10*	0-20*	0-30*
LNG carrier***	10,000 DWT and above	n/a	10**	20	30
Ro-ro cargo ship (vehicle carrier)***	10,000 DWT and above	n/a	5**	15	30
Ro-ro cargo ship***	2,000 DWT and above	n/a	5**	20	30
	1,000 – 2,000 DWT	n/a	0-5*,**	0-20*	0-30*

Ro-ro passenger ship***	1000 DWT and above	n/a	5**	20	30
	250 – 1,000 DWT	n/a	0-5*, **	0-20*	0-30*
Cruise passenger ship*** having non-conventional propulsion	85,000 GT and above	n/a	5**	20	30
	25,000 – 85,000 GT	n/a	0-5*, **	0-20*	0-30*

* Reduction factor to be linearly interpolated between the two values dependent upon ship size. The lower value of the reduction factor is to be applied to the smaller ship size.

** Phase 1 commences for those ships on 1 September 2015.

*** Reduction factor applies to those ships delivered on or after 1 September 2019, as defined in paragraph 43 of regulation 2.

Note: n/a means that no required EEDI applies.

3 The Reference line values shall be calculated as follows:

$$\text{Reference line value} = a \times b^{-c}$$

where a, b and c are the parameters given in Table 2.

Table 2. Parameters for determination of reference values for the different ship types

Ship type defined in regulation 2	a	b	c
2.25 Bulk carrier	961.79	DWT of the ship	0.477
2.26 Gas carrier	1120.00	DWT of the ship	0.456
2.27 Tanker	1218.80	DWT of the ship	0.488
2.28 Container ship	174.22	DWT of the ship	0.201
2.29 General cargo ship	107.48	DWT of the ship	0.216
2.30 Refrigerated cargo carrier	227.01	DWT of the ship	0.244
2.31 Combination carrier	1219.00	DWT of the ship	0.488
2.33 Ro-ro cargo ship (vehicle carrier)	$(\text{DWT/GT})^{-0.7} \cdot 780.36$ where $\text{DWT/GT} < 0.3$ 1812.63 where $\text{DWT/GT} \geq 0.3$	DWT of the ship	0.471
2.34 Ro-ro cargo ship	1405.15	DWT of the ship	0.498
2.35 Ro-ro passenger ship	752.16	DWT of the ship	0.381
2.38 LNG carrier	2253.7	DWT of the ship	0.474
2.39 Cruise passenger ship having non-conventional propulsion	170.84	GT of the ship	0.214

4 If the design of a ship allows it to fall into more than one of the ship type definitions specified in table 2, the required EEDI for the ship shall be the most stringent (the lowest) required EEDI.

5 For each ship to which this regulation applies, the installed propulsion power shall not be less than the propulsion power needed to maintain the manoeuvrability of the ship under adverse conditions as defined in the guidelines to be developed by the Organization.

6 At the beginning of Phase 1 and at the midpoint of Phase 2, the Organization shall review the status of technological developments and, if proven necessary, amend the time periods, the EEDI reference line parameters for relevant ship types and reduction rates set out in this regulation.

Regulation 22

Ship Energy Efficiency Management Plan (SEEMP)

1 Each ship shall keep on board a ship specific Ship Energy Efficiency Management Plan (SEEMP). This may form part of the ship's Safety Management System (SMS).

2 The SEEMP shall be developed taking into account guidelines adopted by the Organization.

Regulation 23

Promotion of technical co-operation and transfer of technology relating to the improvement of energy efficiency of ships

1 Administrations shall, in co-operation with the Organization and other international bodies, promote and provide, as appropriate, support directly or through the Organization to States, especially developing States, that request technical assistance.

2 The Administration of a Party shall co-operate actively with other Parties, subject to its national laws, regulations and policies, to promote the development and transfer of technology and exchange of information to States which request technical assistance, particularly developing States, in respect of the implementation of measures to fulfil the requirements of chapter 4 of this annex, in particular regulations 19.4 to 19.6.

CHAPTER V
VERIFICATION OF COMPLIANCE WITH THE PROVISIONS OF THIS ANNEX

Regulation 24

Application

Parties shall use the provisions of the Code for Implementation in the execution of their obligations and responsibilities contained in this Annex.

Regulation 25

Verification of compliance

1 Every Party shall be subject to periodic audits by the Organization in accordance with the audit standard to verify compliance with and implementation of this Annex.

2 The Secretary-General of the Organization shall have responsibility for administering the Audit Scheme, based on the guidelines developed by the Organization.

3 Every Party shall have responsibility for facilitating the conduct of the audit and implementation of a programme of actions to address the findings, based on the guidelines developed by the Organization.

4 Audit of all Parties shall be:

.1 based on an overall schedule developed by the Secretary-General of the Organization, taking into account the guidelines developed by the Organization; and

.2 conducted at periodic intervals, taking into account the guidelines developed by the Organization.

APPENDIX I
FORM OF INTERNATIONAL AIR POLLUTION PREVENTION (IAPP) CERTIFICATE
(Regulation 8)

INTERNATIONAL AIR POLLUTION PREVENTION CERTIFICATE

Issued under the provisions of the Protocol of 1997, as amended by resolution MEPC.xx(58) in 2008, to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by 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)*

Particulars of ship*

Name of ship.....

Distinctive number or
letters.....

Port of
registry.....

Gross tonnage.....

IMO Number⁺.....

* 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 materials fully comply with the applicable requirements of Annex VI of the Convention.

Completion date of 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)

(dd/mm/yyyy):
(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 2.3 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 that Annex:

Annual survey: Signed:
(Signature of authorized official)

Place:

Date (dd/mm/yyyy):

(Seal or stamp of the authority, as appropriate)

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

Place:

Date (dd/mm/yyyy):

(Seal or stamp of the authority, as appropriate)

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

Place:

Date (dd/mm/yyyy):

(Seal or stamp of the authority, as appropriate)

Annual survey: Signed:
(Signature of authorized official)

Place:

Date (dd/mm/yyyy):

(Seal or stamp of the authority, as appropriate)

* Delete as appropriate.

Annual/intermediate survey in accordance with regulation 9.8.3

THIS IS TO CERTIFY that, at an annual/intermediate* survey in accordance with regulation 9.8.3 of Annex VI of the Convention, the ship was found to comply with the relevant provisions of that Annex:

Signed:
(Signature of authorized official)

Place:

Date (dd/mm/yyyy):

(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 Annex, and this certificate shall, in accordance with regulation 9.3 of Annex VI of the Convention, be accepted as valid until (dd/mm/yyyy):

Signed:
(Signature of authorized official)

Place:

Date (dd/mm/yyyy):

(Seal or stamp of the authority, as appropriate)

Endorsement where the renewal survey has been completed and regulation 9.4 applies

The ship complies with the relevant provisions of the Annex, and this certificate shall, in accordance with regulation 9.4 of Annex VI of the Convention, be accepted as valid until (dd/mm/yyyy):

Signed:
(Signature of authorized official)

Place:

Date (dd/mm/yyyy):

(Seal or stamp of the authority, as appropriate)

* Delete 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 9.6 applies

This certificate shall, in accordance with regulation 9.5 or 9.6* of Annex VI of the Convention, be accepted as valid until (dd/mm/yyyy):.....

Signed:
(Signature of authorized official)

Place:

Date (dd/mm/yyyy):

(Seal or stamp of the authority, 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 (dd/mm/yyyy):

Signed:
(Signature of authorized official)

Place:

Date (dd/mm/yyyy):

(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 (dd/mm/yyyy):

Signed:
(Signature of authorized official)

Place:

Date (dd/mm/yyyy):

(Seal or stamp of the authority, as appropriate)

* Delete as appropriate.

**SUPPLEMENT TO
INTERNATIONAL AIR POLLUTION PREVENTION CERTIFICATE
(IAPP CERTIFICATE)**

RECORD OF CONSTRUCTION AND EQUIPMENT

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 IMO number
- 1.3 Date on which keel was laid or ship was at a similar stage of construction
- 1.4 Length (L)[#] metres

2 Control of emissions from ships

2.1 *Ozone depleting substances (regulation 12)*

2.1.1 The following fire-extinguishing systems, other systems and equipment containing ozone depleting substances, other than hydro-chlorofluorocarbons, installed before 19 May 2005 may continue in service:

System or equipment	Location on board	Substance

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

System or equipment	Location on board	Substance

[#] Completed only in respect of ships constructed on or after 1 January 2016 that are specially designed, and used solely for recreational purposes and to which, in accordance with regulation 13.5.2.1 or regulation 13.5.2.3, the NOX emission limit as given by regulation 13.5.1.1 will not apply.

2.2 Nitrogen oxides (NO_x) (regulation 13)

2.2.1 The following marine diesel engines installed on this ship are in accordance with the requirements of regulation 13, as indicated:

	Applicable regulation of MARPOL Annex VI (NTC = NOX Technical Code 2008) (AM = Approved Method)	Engine #1	Engine #2	Engine #3	Engine #4	Engine #5	Engine #6
1	Manufacturer and model						
2	Serial number						
3	Use (applicable application cycle(s) – NTC 3.2)						
4	Rated power (kW) (NTC 1.3.11)						
5	Rated speed (RPM) (NTC 1.3.12)						
6	Identical engine installed \geq 1/1/2000 exempted by 13.1.1.2						
7	Identical engine installation date (dd/mm/yyyy) as per 13.1.1.2						
8a	Major Conversion (dd/mm/yyyy)	13.2.1.1 & 13.2.2					
8b		13.2.1.2 & 13.2.3					
8c		13.2.1.3 & 13.2.3					
9a	Tier I	13.3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9b		13.2.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9c		13.2.3.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9d		13.2.3.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9e		13.7.1.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10a	Tier II	13.4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10b		13.2.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10c		13.2.2 (Tier III not possible)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10d		13.2.3.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10e		13.5.2 (Exemptions)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10f		13.7.1.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11a	Tier III (ECA-NO _x only)	13.5.1.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11b		13.2.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11c		13.2.3.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11d		13.7.1.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	AM*	installed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13		not commercially available at this survey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14		not applicable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

* Refer to the 2014 Guidelines on the approved method process (resolution MEPC.243(66)).

2.3 Sulphur oxides (SO_x) and particulate matter (regulation 14)

2.3.1 When the ship operates outside of an Emission Control Area specified in regulation 14.3, the ship uses:

.1 fuel oil with a sulphur content as documented by bunker delivery notes that does not exceed the limit value of:

- 4.50% m/m (not applicable on or after 1 January 2012); or
- 3.50% m/m (not applicable on or after 1 January 2020); or
- 0.50% m/m, and/or

.2 an equivalent arrangement approved in accordance with regulation 4.1 as listed in 2.6 that is at least as effective in terms of SO_x emission reductions as compared to using a fuel oil with a sulphur content limit value of:

- 4.50% m/m (not applicable on or after 1 January 2012); or
- 3.50% m/m (not applicable on or after 1 January 2020); or
- 0.50% m/m

2.3.2 When the ship operates inside an Emission Control Area specified in regulation 14.3, the ship uses:

.1 fuel oil with a sulphur content as documented by bunker delivery notes that does not exceed the limit value of:

- 1.00% m/m (not applicable on or after 1 January 2015); or
- 0.10% m/m, and/or

.2 an equivalent arrangement approved in accordance with regulation 4.1 as listed in 2.6 that is at least as effective in terms of SO_x emission reductions as compared to using a fuel oil with a sulphur content limit value of:

- 1.00% m/m (not applicable on or after 1 January 2015); or
- 0.10% m/m, and/or

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.....

2.4.2.1 For a tanker carrying crude oil, there is an approved VOC Management Plan

2.4.2.2 VOC Management Plan approval reference:

2.5 Shipboard incineration (regulation 16)

The ship has an incinerator:

.1 installed on or after 1 January 2000 that complies with:

- .1 resolution MEPC.76(40), as amended.....
- .2 resolution MEPC.244(66).....

.2 installed before 1 January 2000 which complies with:

- .2.1 resolution MEPC.59(33)
- .2.2 resolution MEPC.76(40)

2.6 *Equivalents (regulation 4)*

The ship has been allowed to use the following fitting, material, appliance or apparatus to be fitted in a ship or other procedures, alternative fuel oils, or compliance methods used as an alternative to that required by this Annex:

System or equipment	Equivalent used	Approval reference

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

Issued at
(Place of issue of the Record)

(dd/mm/yyyy):
(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 weighing factors shall be applied for verification of compliance of marine diesel engines with the applicable NO_x limit in accordance with regulation 13 of this Annex using the test procedure and calculation method as specified in the revised NO_x Technical Code 2008.

- .1 For constant-speed marine engines for ship main propulsion, including diesel-electric drive, test cycle E2 shall be applied;
- .2 For controllable-pitch propeller sets test cycle E2 shall be applied;
- .3 For propeller-law-operated main and propeller-law-operated auxiliary engines the test cycle E3 shall be applied;
- .4 For constant-speed auxiliary engines test cycle D2 shall be applied; and
- .5 For variable-speed, variable-load auxiliary engines, not included above, test cycle C1 shall be applied.

Test cycle for *constant speed main propulsion* application
(including diesel-electric drive and all controllable-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

In the case of an engine to be certified in accordance with subparagraph 5.1.1 of regulation 13, the specific emission at each individual mode point shall not exceed the applicable NO_x emission limit value by more than 50% except as follows:

- .1 The 10% mode point in the D2 test cycle.
- .2 The 10% mode point in the C1 test cycle.
- .3 The idle mode point in the C1 test cycle.

APPENDIX III
CRITERIA AND PROCEDURES FOR DESIGNATION OF
EMISSION CONTROL AREAS
(Regulation 13.6 and regulation 14.3)

1 OBJECTIVES

1.1 The purpose of this appendix is to provide the criteria and procedures to Parties for the formulation and submission of proposals for the designation of Emission Control Areas and to set forth the factors to be considered in the assessment of such proposals by the Organization.

1.2 Emissions of NO_x, SO_x and particulate matter from ocean-going ships contribute to ambient concentrations of air pollution in cities and coastal areas around the world. Adverse public health and environmental effects associated with air pollution include premature mortality, cardiopulmonary disease, lung cancer, chronic respiratory ailments, acidification and eutrophication.

1.3 An Emission Control Area should be considered for adoption by the Organization if supported by a demonstrated need to prevent, reduce, and control emissions of NO_x or SO_x and particulate matter or all three types of emissions (hereinafter emissions) from ships.

2 PROCESS FOR THE DESIGNATION OF EMISSION CONTROL AREAS

2.1 A proposal to the Organization for designation of an Emission Control Area for NO_x or SO_x and particulate matter or all three types of emissions may be submitted only by Parties. Where two or more Parties have a common interest in a particular area, they should formulate a coordinated proposal.

2.2 A proposal to designate a given area as an Emission Control Area should be submitted to the Organization in accordance with the rules and procedures established by the Organization.

3 CRITERIA FOR DESIGNATION OF AN EMISSION CONTROL AREA

3.1 The proposal shall include:

- .1 a clear delineation of the proposed area of application, along with a reference chart on which the area is marked;
- .2 the type or types of emission(s) that is or are being proposed for control (i.e. NO_x or SO_x and particulate matter or all three types of emissions);
- .3 a description of the human populations and environmental areas at risk from the impacts of ship emissions;

- .4 an assessment that emissions from ships operating in the proposed area of application are contributing to ambient concentrations of air pollution or to adverse environmental impacts. Such assessment shall include a description of the impacts of the relevant emissions on human health and the environment, such as adverse impacts to 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;
- .5 relevant information pertaining to the meteorological conditions in the proposed area of application to the human populations and environmental areas at risk, in particular prevailing wind patterns, or to topographical, geological, oceanographic, morphological, or other conditions that contribute to ambient concentrations of air pollution or adverse environmental impacts;
- .6 the nature of the ship traffic in the proposed Emission Control Area, including the patterns and density of such traffic;
- .7 a description of the control measures taken by the proposing Party or Parties addressing land-based sources of NO_x, SO_x and particulate matter emissions affecting the human populations and environmental areas at risk that are in place and operating concurrent with the consideration of measures to be adopted in relation to provisions of regulations 13 and 14 of Annex VI; and
- .8 the relative costs of reducing emissions from ships when compared with land-based controls, and the economic impacts on shipping engaged in international trade.

3.2 The geographical limits of an Emission Control Area will be based on the relevant criteria outlined above, including emissions and deposition from ships navigating in the proposed area, traffic patterns and density, and wind conditions.

4 PROCEDURES FOR THE ASSESSMENT AND ADOPTION OF EMISSION CONTROL AREAS BY THE ORGANIZATION

4.1 The Organization shall consider each proposal submitted to it by a Party or Parties.

4.2 In assessing the proposal, the Organization shall take into account the criteria which are to be included in each proposal for adoption as set forth in section 3 above.

4.3 An 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.

5 OPERATION OF EMISSION CONTROL AREAS

5.1 Parties which have ships navigating in the area are encouraged to bring to the Organization any concerns regarding the operation of the area.

APPENDIX IV
TYPE APPROVAL AND OPERATING LIMITS
FOR SHIPBOARD INCINERATORS
(Regulation 16)

1 Ships incinerators described in regulation 16.6.1 on board shall possess an IMO type approval certificate for each incinerator. In order to obtain such certificate, the incinerator shall be designed and built to an approved standard as described in regulation 16.6.1. Each model shall be subject to a specified type approval test operation at the factory or an approved test facility, and under the responsibility of the Administration, using the following standard fuel/waste specification for the type approval test for determining whether the incinerator operates within the limits specified in paragraph 2 of this appendix:

Sludge Oil Consisting of:	75% Sludge oil from HFO; 5% waste lubricating oil; and 20% emulsified water.
Solid waste consisting of:	50% food waste; 50% rubbish containing; approx. 30% paper, " 40% cardboard, " 10% rags, " 20% plastic The mixture will have up to 50% moisture and 7% incombustible solids.

2 Incinerators described in regulation 16.6.1 shall operate within the following limits:

O ₂ in combustion chamber:	6 – 12%
CO in flue gas maximum average:	200 mg/MJ
Soot number maximum average:	Bacharach 3 or Ringelman 1 (20% opacity) (A higher soot number is acceptable only during very short periods such as starting up)
Unburned components in ash residues:	Maximum 10% by Weight
Combustion chamber flue gas outlet temperature range:	850 – 1200°C

APPENDIX V
INFORMATION TO BE INCLUDED IN THE BUNKER DELIVERY NOTE
(Regulation 18.5)

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 in metric tons

Density at 15°C, kg/m³*

* Fuel oil should be tested in accordance with ISO 3675:1998 or ISO 12185:1996.

Sulphur content (%m/m)**

** Fuel oil should be tested in accordance with ISO 8754:2003.

A declaration signed and certified by the fuel oil supplier's representative that the fuel oil supplied is in conformity with the applicable subparagraph of regulation 14.1 or 14.4 and regulation 18.3 of this Annex.

* Fuel oil shall be tested in accordance with ISO 3675:1998 or ISO 12185:1996.

** Fuel oil shall be tested in accordance with ISO 8754:2003.

APPENDIX VI
FUEL VERIFICATION PROCEDURE FOR MARPOL ANNEX VI
FUEL OIL SAMPLES
(Regulation 18.8.2)

The following procedure shall be used to determine whether the fuel oil delivered to and used on board ships is compliant with the sulphur limits required by regulation 14 of Annex VI.

1 General Requirements

1.1 The representative fuel oil sample, which is required by paragraph 8.1 of regulation 18 (the “MARPOL sample”) shall be used to verify the sulphur content of the fuel oil supplied to a ship.

1.2 An Administration, through its competent authority, shall manage the verification procedure.

1.3 The laboratories responsible for the verification procedure set forth in this appendix shall be fully accredited* for the purpose of conducting the tests.

** Accreditation is in accordance with ISO 17025 or an equivalent standard.*

2 Verification Procedure Stage 1

2.1 The MARPOL sample shall be delivered by the competent authority to the laboratory.

2.2 The laboratory shall:

- .1 record the details of the seal number and the sample label on the test record;
- .2 confirm that the condition of the seal on the MARPOL sample has not been broken; and
- .3 reject any MARPOL sample where the seal has been broken.

2.3 If the seal of the MARPOL sample has not been broken, the laboratory shall proceed with the verification procedure and shall:

- .1 ensure that the MARPOL sample is thoroughly homogenized;
- .2 draw two sub-samples from the MARPOL sample; and
- .3 reseal the MARPOL sample and record the new reseal details on the test record.

2.4 The two sub-samples shall be tested in succession, in accordance with the specified test method referred to in appendix V. For the purposes of this verification procedure, the results of the test analysis shall be referred to as “A” and “B”:

* Accreditation is in accordance with ISO 17025 or an equivalent standard.

- .1 If the results of “A” and “B” are within the repeatability (r) of the test method, the results shall be considered valid.
 - .2 If the results of “A” and “B” are not within the repeatability (r) of the test method, both results shall be rejected and two new sub-samples should be taken by the laboratory and analysed. The sample bottle should be resealed in accordance with paragraph 2.3.3 above after the new sub-samples have been taken.
- 2.5 If the test results of “A” and “B” are valid, an average of these two results should be calculated thus giving the result referred to as “X”:
- .1 If the result of “X” is equal to or falls below the applicable limit required by Annex VI, the fuel oil shall be deemed to meet the requirements.
 - .2 If the result of “X” is greater than the applicable limit required by Annex VI, Verification Procedure Stage 2 should be conducted; however, if the result of “X” is greater than the specification limit by 0.59R (where R is the reproducibility of the test method), the fuel oil shall be considered non-compliant and no further testing is necessary.

3 Verification Procedure Stage 2

- 3.1 If Stage 2 of the verification procedure is necessary in accordance with paragraph 2.5.2 above, the competent authority shall send the MARPOL sample to a second accredited laboratory.
- 3.2 Upon receiving the MARPOL sample, the laboratory shall:
- .1 record the details of the reseal number applied in accordance with 2.3.3 and the sample label on the test record;
 - .2 draw two sub-samples from the MARPOL sample; and
 - .3 reseal the MARPOL sample and record the new reseal details on the test record.
- 3.3 The two sub-samples shall be tested in succession, in accordance with the test method specified in appendix V. For the purposes of this verification procedure, the results of the test analysis shall be referred to as “C” and “D”:
- .1 If the results of “C” and “D” are within the repeatability (r) of the test method, the results shall be considered valid.
 - .2 If the results of “C” and “D” are not within the repeatability (r) of the test method, both results shall be rejected and two new sub-samples shall be taken by the laboratory and analysed. The sample bottle should be resealed in accordance with paragraph 3.2.3 after the new sub-samples have been taken.
- 3.4 If the test results of “C” and “D” are valid, and the results of “A”, “B”, “C”, and “D” are within the reproducibility (R) of the test method then the laboratory shall average the results, which is referred to as “Y”:

- .1 If the result of “Y” is equal to or falls below the applicable limit required by Annex VI, the fuel oil shall be deemed to meet the requirements.
 - .2 If the result of “Y” is greater than the applicable limit required by Annex VI, then the fuel oil fails to meet the standards required by Annex VI.
- 3.5 If the result of “A”, “B”, “C” and “D” are not within the reproducibility (R) of the test method then the Administration may discard all of the test results and, at its discretion, repeat the entire testing process.
- 3.6 The results obtained from the verification procedure are final.

Appendix VII
NORTH AMERICAN EMISSION CONTROL AREA
(regulation 13.6 and regulation 14.3)

.1 The boundaries of emission control areas designated under regulations 13.6 and 14.3, other than the Baltic Sea and the North Sea areas, are set forth in this appendix.

.2 The North American area comprises:

.1 the sea area located off the Pacific coasts of the United States and Canada, enclosed by geodesic lines connecting the following coordinates***

POINT	LATITUDE	LONGITUDE
1	32° 32' 10" N.	117° 06' 11" W.
2	32° 32' 04" N.	117° 07' 29" W.
3	32° 31' 39" N.	117° 14' 20" W.
4	32° 33' 13" N.	117° 15' 50" W.
5	32° 34' 21" N.	117° 22' 01" W.
6	32° 35' 23" N.	117° 27' 53" W.
7	32° 37' 38" N.	117° 49' 34" W.
8	31° 07' 59" N.	118° 36' 21" W.
9	30° 33' 25" N.	121° 47' 29" W.
10	31° 46' 11" N.	123° 17' 22" W.
11	32° 21' 58" N.	123° 50' 44" W.
12	32° 56' 39" N.	124° 11' 47" W.
13	33° 40' 12" N.	124° 27' 15" W.
14	34° 31' 28" N.	125° 16' 52" W.
15	35° 14' 38" N.	125° 43' 23" W.
16	35° 43' 60" N.	126° 18' 53" W.
17	36° 16' 25" N.	126° 45' 30" W.
18	37° 01' 35" N.	127° 07' 18" W.
19	37° 45' 39" N.	127° 38' 02" W.
20	38° 25' 08" N.	127° 52' 60" W.
21	39° 25' 05" N.	128° 31' 23" W.
22	40° 18' 47" N.	128° 45' 46" W.
23	41° 13' 39" N.	128° 40' 22" W.
24	42° 12' 49" N.	129° 00' 38" W.

25	42° 47' 34" N.	129° 05' 42" W.
26	43° 26' 22" N.	129° 01' 26" W.
27	44° 24' 43" N.	128° 41' 23" W.
28	45° 30' 43" N.	128° 40' 02" W.
29	46° 11' 01" N.	128° 49' 01" W.
30	46° 33' 55" N.	129° 04' 29" W.
31	47° 39' 55" N.	131° 15' 41" W.
32	48° 32' 32" N.	132° 41' 00" W.
33	48° 57' 47" N.	133° 14' 47" W.
34	49° 22' 39" N.	134° 15' 51" W.
35	50° 01' 52" N.	135° 19' 01" W.
36	51° 03' 18" N.	136° 45' 45" W.
37	51° 54' 04" N.	137° 41' 54" W.
38	52° 45' 12" N.	138° 20' 14" W.
39	53° 29' 20" N.	138° 40' 36" W.
40	53° 40' 39" N.	138° 48' 53" W.
41	54° 13' 45" N.	139° 32' 38" W.
42	54° 39' 25" N.	139° 56' 19" W.
43	55° 20' 18" N.	140° 55' 45" W.
44	56° 07' 12" N.	141° 36' 18" W.
45	56° 28' 32" N.	142° 17' 19" W.
46	56° 37' 19" N.	142° 48' 57" W.
47	58° 51' 04" N.	153° 15' 03" W.

.2 the sea areas located off the Atlantic coasts of the United States, Canada, and France (Saint-Pierre-et-Miquelon) and the Gulf of Mexico coast of the United States enclosed by geodesic lines connecting the following coordinates:

POINT	LATITUDE	LONGITUDE
1	60° 00' 00" N.	64° 09' 36" W.
2	60° 00' 00" N.	56° 43' 00" W.
3	58° 54' 01" N.	55° 38' 05" W.
4	57° 50' 52" N.	55° 03' 47" W.
5	57° 35' 13" N.	54° 00' 59" W.
6	57° 14' 20" N.	53° 07' 58" W.
7	56° 48' 09" N.	52° 23' 29" W.

8	56° 18' 13" N.	51° 49' 42" W.
9	54° 23' 21" N.	50° 17' 44" W.
10	53° 44' 54" N.	50° 07' 17" W.
11	53° 04' 59" N.	50° 10' 05" W.
12	52° 20' 06" N.	49° 57' 09" W.
13	51° 34' 20" N.	48° 52' 45" W.
14	50° 40' 15" N.	48° 16' 04" W.
15	50° 02' 28" N.	48° 07' 03" W.
16	49° 24' 03" N.	48° 09' 35" W.
17	48° 39' 22" N.	47° 55' 17" W.
18	47° 24' 25" N.	47° 46' 56" W.
19	46° 35' 12" N.	48° 00' 54" W.
20	45° 19' 45" N.	48° 43' 28" W.
21	44° 43' 38" N.	49° 16' 50" W.
22	44° 16' 38" N.	49° 51' 23" W.
23	43° 53' 15" N.	50° 34' 01" W.
24	43° 36' 06" N.	51° 20' 41" W.
25	43° 23' 59" N.	52° 17' 22" W.
26	43° 19' 50" N.	53° 20' 13" W.
27	43° 21' 14" N.	54° 09' 20" W.
28	43° 29' 41" N.	55° 07' 41" W.
29	42° 40' 12" N.	55° 31' 44" W.
30	41° 58' 19" N.	56° 09' 34" W.
31	41° 20' 21" N.	57° 05' 13" W.
32	40° 55' 34" N.	58° 02' 55" W.
33	40° 41' 38" N.	59° 05' 18" W.
34	40° 38' 33" N.	60° 12' 20" W.
35	40° 45' 46" N.	61° 14' 03" W.
36	41° 04' 52" N.	62° 17' 49" W.
37	40° 36' 55" N.	63° 10' 49" W.
38	40° 17' 32" N.	64° 08' 37" W.
39	40° 07' 46" N.	64° 59' 31" W.
40	40° 05' 44" N.	65° 53' 07" W.
41	39° 58' 05" N.	65° 59' 51" W.
42	39° 28' 24" N.	66° 21' 14" W.
43	39° 01' 54" N.	66° 48' 33" W.

44	38° 39' 16" N.	67° 20' 59" W.
45	38° 19' 20" N.	68° 02' 01" W.
46	38° 05' 29" N.	68° 46' 55" W.
47	37° 58' 14" N.	69° 34' 07" W.
48	37° 57' 47" N.	70° 24' 09" W.
49	37° 52' 46" N.	70° 37' 50" W.
50	37° 18' 37" N.	71° 08' 33" W.
51	36° 32' 25" N.	71° 33' 59" W.
52	35° 34' 58" N.	71° 26' 02" W.
53	34° 33' 10" N.	71° 37' 04" W.
54	33° 54' 49" N.	71° 52' 35" W.
55	33° 19' 23" N.	72° 17' 12" W.
56	32° 45' 31" N.	72° 54' 05" W.
57	31° 55' 13" N.	74° 12' 02" W.
58	31° 27' 14" N.	75° 15' 20" W.
59	31° 03' 16" N.	75° 51' 18" W.
60	30° 45' 42" N.	76° 31' 38" W.
61	30° 12' 48" N.	77° 18' 29" W.
62	29° 25' 17" N.	76° 56' 42" W.
63	28° 36' 59" N.	76° 47' 60" W.
64	28° 17' 13" N.	76° 40' 10" W.
65	28° 17' 12" N.	79° 11' 23" W.
66	27° 52' 56" N.	79° 28' 35" W.
67	27° 26' 01" N.	79° 31' 38" W.
68	27° 16' 13" N.	79° 34' 18" W.
69	27° 11' 54" N.	79° 34' 56" W.
70	27° 05' 59" N.	79° 35' 19" W.
71	27° 00' 28" N.	79° 35' 17" W.
72	26° 55' 16" N.	79° 34' 39" W.
73	26° 53' 58" N.	79° 34' 27" W.
74	26° 45' 46" N.	79° 32' 41" W.
75	26° 44' 30" N.	79° 32' 23" W.
76	26° 43' 40" N.	79° 32' 20" W.
77	26° 41' 12" N.	79° 32' 01" W.
78	26° 38' 13" N.	79° 31' 32" W.
79	26° 36' 30" N.	79° 31' 06" W.

80	26° 35' 21" N.	79° 30' 50" W.
81	26° 34' 51" N.	79° 30' 46" W.
82	26° 34' 11" N.	79° 30' 38" W.
83	26° 31' 12" N.	79° 30' 15" W.
84	26° 29' 05" N.	79° 29' 53" W.
85	26° 25' 31" N.	79° 29' 58" W.
86	26° 23' 29" N.	79° 29' 55" W.
87	26° 23' 21" N.	79° 29' 54" W.
88	26° 18' 57" N.	79° 31' 55" W.
89	26° 15' 26" N.	79° 33' 17" W.
90	26° 15' 13" N.	79° 33' 23" W.
91	26° 08' 09" N.	79° 35' 53" W.
92	26° 07' 47" N.	79° 36' 09" W.
93	26° 06' 59" N.	79° 36' 35" W.
94	26° 02' 52" N.	79° 38' 22" W.
95	25° 59' 30" N.	79° 40' 03" W.
96	25° 59' 16" N.	79° 40' 08" W.
97	25° 57' 48" N.	79° 40' 38" W.
98	25° 56' 18" N.	79° 41' 06" W.
99	25° 54' 04" N.	79° 41' 38" W.
100	25° 53' 24" N.	79° 41' 46" W.
101	25° 51' 54" N.	79° 41' 59" W.
102	25° 49' 33" N.	79° 42' 16" W.
103	25° 48' 24" N.	79° 42' 23" W.
104	25° 48' 20" N.	79° 42' 24" W.
105	25° 46' 26" N.	79° 42' 44" W.
106	25° 46' 16" N.	79° 42' 45" W.
107	25° 43' 40" N.	79° 42' 59" W.
108	25° 42' 31" N.	79° 42' 48" W.
109	25° 40' 37" N.	79° 42' 27" W.
110	25° 37' 24" N.	79° 42' 27" W.
111	25° 37' 08" N.	79° 42' 27" W.
112	25° 31' 03" N.	79° 42' 12" W.
113	25° 27' 59" N.	79° 42' 11" W.
114	25° 24' 04" N.	79° 42' 12" W.
115	25° 22' 21" N.	79° 42' 20" W.

116	25° 21' 29" N.	79° 42' 08" W.
117	25° 16' 52" N.	79° 41' 24" W.
118	25° 15' 57" N.	79° 41' 31" W.
119	25° 10' 39" N.	79° 41' 31" W.
120	25° 09' 51" N.	79° 41' 36" W.
121	25° 09' 03" N.	79° 41' 45" W.
122	25° 03' 55" N.	79° 42' 29" W.
123	25° 02' 60" N.	79° 42' 56" W.
124	25° 00' 30" N.	79° 44' 05" W.
125	24° 59' 03" N.	79° 44' 48" W.
126	24° 55' 28" N.	79° 45' 57" W.
127	24° 44' 18" N.	79° 49' 24" W.
128	24° 43' 04" N.	79° 49' 38" W.
129	24° 42' 36" N.	79° 50' 50" W.
130	24° 41' 47" N.	79° 52' 57" W.
131	24° 38' 32" N.	79° 59' 58" W.
132	24° 36' 27" N.	80° 03' 51" W.
133	24° 33' 18" N.	80° 12' 43" W.
134	24° 33' 05" N.	80° 13' 21" W.
135	24° 32' 13" N.	80° 15' 16" W.
136	24° 31' 27" N.	80° 16' 55" W.
137	24° 30' 57" N.	80° 17' 47" W.
138	24° 30' 14" N.	80° 19' 21" W.
139	24° 30' 06" N.	80° 19' 44" W.
140	24° 29' 38" N.	80° 21' 05" W.
141	24° 28' 18" N.	80° 24' 35" W.
142	24° 28' 06" N.	80° 25' 10" W.
143	24° 27' 23" N.	80° 27' 20" W.
144	24° 26' 30" N.	80° 29' 30" W.
145	24° 25' 07" N.	80° 32' 22" W.
146	24° 23' 30" N.	80° 36' 09" W.
147	24° 22' 33" N.	80° 38' 56" W.
148	24° 22' 07" N.	80° 39' 51" W.
149	24° 19' 31" N.	80° 45' 21" W.
150	24° 19' 16" N.	80° 45' 47" W.
151	24° 18' 38" N.	80° 46' 49" W.

152	24° 18' 35" N.	80° 46' 54" W.
153	24° 09' 51" N.	80° 59' 47" W.
154	24° 09' 48" N.	80° 59' 51" W.
155	24° 08' 58" N.	81° 01' 07" W.
156	24° 08' 30" N.	81° 01' 51" W.
157	24° 08' 26" N.	81° 01' 57" W.
158	24° 07' 28" N.	81° 03' 06" W.
159	24° 02' 20" N.	81° 09' 05" W.
160	23° 59' 60" N.	81° 11' 16" W.
161	23° 55' 32" N.	81° 12' 55" W.
162	23° 53' 52" N.	81° 19' 43" W.
163	23° 50' 52" N.	81° 29' 59" W.
164	23° 50' 02" N.	81° 39' 59" W.
165	23° 49' 05" N.	81° 49' 59" W.
166	23° 49' 05" N.	82° 00' 11" W.
167	23° 49' 42" N.	82° 09' 59" W.
168	23° 51' 14" N.	82° 24' 59" W.
169	23° 51' 14" N.	82° 39' 59" W.
170	23° 49' 42" N.	82° 48' 53" W.
171	23° 49' 32" N.	82° 51' 11" W.
172	23° 49' 24" N.	82° 59' 59" W.
173	23° 49' 52" N.	83° 14' 59" W.
174	23° 51' 22" N.	83° 25' 49" W.
175	23° 52' 27" N.	83° 33' 01" W.
176	23° 54' 04" N.	83° 41' 35" W.
177	23° 55' 47" N.	83° 48' 11" W.
178	23° 58' 38" N.	83° 59' 59" W.
179	24° 09' 37" N.	84° 29' 27" W.
180	24° 13' 20" N.	84° 38' 39" W.
181	24° 16' 41" N.	84° 46' 07" W.
182	24° 23' 30" N.	84° 59' 59" W.
183	24° 26' 37" N.	85° 06' 19" W.
184	24° 38' 57" N.	85° 31' 54" W.
185	24° 44' 17" N.	85° 43' 11" W.
186	24° 53' 57" N.	85° 59' 59" W.
187	25° 10' 44" N.	86° 30' 07" W.

188	25° 43' 15" N.	86° 21' 14" W.
189	26° 13' 13" N.	86° 06' 45" W.
190	26° 27' 22" N.	86° 13' 15" W.
191	26° 33' 46" N.	86° 37' 07" W.
192	26° 01' 24" N.	87° 29' 35" W.
193	25° 42' 25" N.	88° 33' 00" W.
194	25° 46' 54" N.	90° 29' 41" W.
195	25° 44' 39" N.	90° 47' 05" W.
196	25° 51' 43" N.	91° 52' 50" W.
197	26° 17' 44" N.	93° 03' 59" W.
198	25° 59' 55" N.	93° 33' 52" W.
199	26° 00' 32" N.	95° 39' 27" W.
200	26° 00' 33" N.	96° 48' 30" W.
201	25° 58' 32" N.	96° 55' 28" W.
202	25° 58' 15" N.	96° 58' 41" W.
203	25° 57' 58" N.	97° 01' 54" W.
204	25° 57' 41" N.	97° 05' 08" W.
205	25° 57' 24" N.	97° 08' 21" W.
206	25° 57' 24" N.	97° 08' 47" W.

.3 the sea area located off the coasts of the Hawaiian Islands of Hawai'i, Maui, Oahu, Moloka'i, Ni'ihau, Kaua'i, Lāna'i, and Kaho'olawe, enclosed by geodesic lines connecting the following coordinates:

POINT	LATITUDE	LONGITUDE
1	22° 32' 54" N.	153° 00' 33" W.
2	23° 06' 05" N.	153° 28' 36" W.
3	23° 32' 11" N.	154° 02' 12" W.
4	23° 51' 47" N.	154° 36' 48" W.
5	24° 21' 49" N.	155° 51' 13" W.
6	24° 41' 47" N.	156° 27' 27" W.
7	24° 57' 33" N.	157° 22' 17" W.
8	25° 13' 41" N.	157° 54' 13" W.
9	25° 25' 31" N.	158° 30' 36" W.
10	25° 31' 19" N.	159° 09' 47" W.
11	25° 30' 31" N.	159° 54' 21" W.
12	25° 21' 53" N.	160° 39' 53" W.

13	25° 00' 06" N.	161° 38' 33" W.
14	24° 40' 49" N.	162° 13' 13" W.
15	24° 15' 53" N.	162° 43' 08" W.
16	23° 40' 50" N.	163° 13' 00" W.
17	23° 03' 20" N.	163° 32' 58" W.
18	22° 20' 09" N.	163° 44' 41" W.
19	21° 36' 45" N.	163° 46' 03" W.
20	20° 55' 26" N.	163° 37' 44" W.
21	20° 13' 34" N.	163° 19' 13" W.
22	19° 39' 03" N.	162° 53' 48" W.
23	19° 09' 43" N.	162° 20' 35" W.
24	18° 39' 16" N.	161° 19' 14" W.
25	18° 30' 31" N.	160° 38' 30" W.
26	18° 29' 31" N.	159° 56' 17" W.
27	18° 10' 41" N.	159° 14' 08" W.
28	17° 31' 17" N.	158° 56' 55" W.
29	16° 54' 06" N.	158° 30' 29" W.
30	16° 25' 49" N.	157° 59' 25" W.
31	15° 59' 57" N.	157° 17' 35" W.
32	15° 40' 37" N.	156° 21' 06" W.
33	15° 37' 36" N.	155° 22' 16" W.
34	15° 43' 46" N.	154° 46' 37" W.
35	15° 55' 32" N.	154° 13' 05" W.
36	16° 46' 27" N.	152° 49' 11" W.
37	17° 33' 42" N.	152° 00' 32" W.
38	18° 30' 16" N.	151° 30' 24" W.
39	19° 02' 47" N.	151° 22' 17" W.
40	19° 34' 46" N.	151° 19' 47" W.
41	20° 07' 42" N.	151° 22' 58" W.
42	20° 38' 43" N.	151° 31' 36" W.
43	21° 29' 09" N.	151° 59' 50" W.
44	22° 06' 58" N.	152° 31' 25" W.
45	22° 32' 54" N.	153° 00' 33" W.

.3 The United States Caribbean Sea area includes:

.1 the sea area located off the Atlantic and Caribbean coasts of the Commonwealth of Puerto Rico and the United States Virgin Islands, enclosed by geodesic lines connecting the following coordinates:

POINT	LATITUDE	LONGITUDE
1	17° 18' 37" N.	67° 32' 14" W.
2	19° 11' 14" N.	67° 26' 45" W.
3	19° 30' 28" N.	65° 16' 48" W.
4	19° 12' 25" N.	65° 6' 8" W.
5	18° 45' 13" N.	65° 0' 22" W.
6	18° 41' 14" N.	64° 59' 33" W.
7	18° 29' 22" N.	64° 53' 51" W.
8	18° 27' 35" N.	64° 53' 22" W.
9	18° 25' 21" N.	64° 52' 39" W.
10	18° 24' 30" N.	64° 52' 19" W.
11	18° 23' 51" N.	64° 51' 50" W.
12	18° 23' 42" N.	64° 51' 23" W.
13	18° 23' 36" N.	64° 50' 17" W.
14	18° 23' 48" N.	64° 49' 41" W.
15	18° 24' 11" N.	64° 49' 0" W.
16	18° 24' 28" N.	64° 47' 57" W.
17	18° 24' 18" N.	64° 47' 1" W.
18	18° 23' 13" N.	64° 46' 37" W.
19	18° 22' 37" N.	64° 45' 20" W.
20	18° 22' 39" N.	64° 44' 42" W.
21	18° 22' 42" N.	64° 44' 36" W.
22	18° 22' 37" N.	64° 44' 24" W.
23	18° 22' 39" N.	64° 43' 42" W.
24	18° 22' 30" N.	64° 43' 36" W.
25	18° 22' 25" N.	64° 42' 58" W.
26	18° 22' 26" N.	64° 42' 28" W.
27	18° 22' 15" N.	64° 42' 3" W.
28	18° 22' 22" N.	64° 38' 23" W.
29	18° 21' 57" N.	64° 40' 60" W.
30	18° 21' 51" N.	64° 40' 15" W.
31	18° 21' 22" N.	64° 38' 16" W.
32	18° 20' 39" N.	64° 38' 33" W.
33	18° 19' 15" N.	64° 38' 14" W.
34	18° 19' 7" N.	64° 38' 16" W.

35	18° 17' 23" N.	64° 39' 38" W.
36	18° 16' 43" N.	64° 39' 41" W.
37	18° 11' 33" N.	64° 38' 58" W.
38	18° 3' 2" N.	64° 38' 3" W.
39	18° 2' 56" N.	64° 29' 35" W.
40	18° 2' 51" N.	64° 27' 2" W.
41	18° 2' 30" N.	64° 21' 8" W.
42	18° 2' 31" N.	64° 20' 8" W.
43	18° 2' 3" N.	64° 15' 57" W.
44	18° 0' 12" N.	64° 2' 29" W.
45	17° 59' 58" N.	64° 1' 4" W.
46	17° 58' 47" N.	63° 57' 1" W.
47	17° 57' 51" N.	63° 53' 54" W.
48	17° 56' 38" N.	63° 53' 21" W.
49	17° 39' 40" N.	63° 54' 53" W.
50	17° 37' 8" N.	63° 55' 10" W.
51	17° 30' 21" N.	63° 55' 56" W.
52	17° 11' 36" N.	63° 57' 57" W.
53	17° 4' 60" N.	63° 58' 41" W.
54	16° 59' 49" N.	63° 59' 18" W.
55	17° 18' 37" N.	67° 32' 14" W.

**APPENDIX VIII
FORM OF INTERNATIONAL ENERGY EFFICIENCY (IEE) CERTIFICATE**

INTERNATIONAL ENERGY EFFICIENCY CERTIFICATE

Issued under the provisions of the Protocol of 1997, as amended by resolution MEPC.203(62), to amend the International Convention for the Prevention of Pollution by Ships, 1973, as modified by the Protocol of 1978 related thereto (hereinafter referred to as "the Convention") under the authority of the Government of:

.....
(Full designation of the Party)

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

THIS IS TO CERTIFY:

- 1 That the ship has been surveyed in accordance with regulation 5.4 of Annex VI of the Convention; and
- 2 That the survey shows that the ship complies with the applicable requirements in regulation 20, regulation 21 and regulation 22.

Completion date of survey on which this Certificate is based: (dd/mm/yyyy)

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)

**SUPPLEMENT TO
INTERNATIONAL ENERGY EFFICIENCY CERTIFICATE
(IEE CERTIFICATE)**

RECORD OF CONSTRUCTION RELATING TO ENERGY EFFICIENCY

Notes:

1 This Record shall be permanently attached to the IEE Certificate. The IEE 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 Party 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 answers "yes" and "applicable"; or a dash (-) for the answers "no" and "not applicable", as appropriate.

4 Unless otherwise stated, regulations mentioned in this Record refer to regulations in 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 IMO number
- 1.3 Date of building contract
- 1.4 Gross tonnage
- 1.5 Deadweight
- 1.6 Type of ship*

2 Propulsion system

- 2.1 Diesel propulsion
- 2.2 Diesel-electric propulsion
- 2.3 Turbine propulsion
- 2.4 Hybrid propulsion
- 2.5 Propulsion system other than any of the above

* Insert ship type in accordance with definitions specified in regulation 2. Ships falling into more than one of the ship types defined in regulation 2 should be considered as being the ship type with the most stringent (the lowest) required EEDI. If ship does not fall into the ship types defined in regulation 2, insert "Ship other than any of the ship type defined in regulation 2".

3 Attained Energy Efficiency Design Index (EEDI)

3.1 The Attained EEDI in accordance with regulation 20.1 is calculated based on the information contained in the EEDI technical file which also shows the process of calculating the Attained EEDI.

The Attained EEDI is: grams-CO₂/tonne-mile

3.2 The Attained EEDI is not calculated as:

3.2.1 the ship is exempt under regulation 20.1 as it is not a new ship as defined in regulation 2.23

3.2.2 the type of propulsion system is exempt in accordance with regulation 19.3.....

3.2.3 the requirement of regulation 20 is waived by the ship's Administration in accordance with regulation 19.4

3.2.4 the type of ship is exempt in accordance with regulation 20.1

4 Required EEDI

4.1 Required EEDI is: grams-CO₂/tonne-mile

4.2 The required EEDI is not applicable as:

4.2.1 the ship is exempt under regulation 21.1 as it is not a new ship as defined in regulation 2.23

4.2.2 the type of propulsion system is exempt in accordance with regulation 19.3

4.2.3 the requirement of regulation 21 is waived by the ship's Administration in accordance with regulation 19.4

4.2.4 the type of ship is exempt in accordance with regulation 21.1

4.2.5 the ship's capacity is below the minimum capacity threshold in Table 1 of regulation 21.2

5 Ship Energy Efficiency Management Plan

5.1 The ship is provided with a Ship Energy Efficiency Management Plan (SEEMP) in compliance with regulation 22

6 EEDI technical file

6.1 The IEE Certificate is accompanied by the EEDI technical file in compliance with regulation 20.1

6.2 The EEDI technical file identification/verification number

6.3 The EEDI technical file verification date

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

Issued at
(Place of issue of the Record)

(dd/mm/yyyy):
(Date of issue) (Signature of duly authorized official
issuing the Record)

(Seal or stamp of the authority, as appropriate)
