# LOCAL VESSELS ADVISORYCOMMITTEE

# Proposed amendments to the Merchant Shipping (Prevention of Air Pollution) Regulation (Cap. 413P)

# Purpose

This paper seeks members' views on the proposal to amend the Merchant Shipping (Prevention of Air Pollution) Regulation (Cap. 413P) to implement the amended Annex VI to the International Convention for the Prevention of Pollution from Ships (MARPOL Annex VI) concerning the requirements for local vessels.

# Background

2. On 20 November 2020, the 75th session of the Marine Environment Protection Committee (MEPC) of the International Maritime Organization (IMO) adopted Resolution MEPC.324(75) (see **enclosed**<sup>1</sup>) to amend the requirements of MARPOL Annex VI. The amendments will enter into force globally on 1 April 2022.

3. The main amendments to MAPROL Annex VI under Resolution MEPC.324(75) are as follows:

- (a) to require a ship of 400 gross tonnage and above constructed on or after 1 April 2022 to fit or designate sampling point(s) for taking representative sample of fuel oil in use on board the ship;
- (b) to require ships of 400 gross tonnage and above constructed before 1 April 2022 to comply with the sampling point(s) requirement stated in paragraph 3(a) above not later than the first renewal survey carried out on or after 1 April 2023;
- (c) to follow specified fuel verification procedure when analyzing the in-use or on board fuel oil sample; and

<sup>&</sup>lt;sup>1</sup> IMO can only provide the Resolution in English for reference for the time being.

 (d) to bring forward the effective date of the Energy Efficiency Design Index (EEDI) Phase 3 requirements from 2025 to 2022 for certain ship types of applicable tonnage size<sup>2</sup>.

# **Proposed Legislative Amendments**

4. To align with international standards, the Marine Department is drafting amendments to the relevant provisions of Cap. 413P for implementing the new requirements of the resolution. Since the provisions of Cap. 413P related to EEDI and fuel verification procedure can be implemented by virtue of the direct reference approach, no further amendments to local legislation are required. Subject to legal advice, relevant provisions of Cap. 413P should be amended to give effect to the sampling point(s) requirements for taking representative samples as stated in the resolution. The legislative amendments are expected to be submitted to the Legislative Council for consideration in the 2020-21 legislative session.

5. Upon the commencement of the amendments to local legislation, local vessels of 400 gross tonnage and above shall comply with the sampling point(s) requirement stated in paragraph 3(a) above for a new application of the Air Pollution Prevention Certificate or the first renewal survey carried out 12 months or later after the legislation entered into force.

6. Members are invited to give comments on paragraph 5 above.

Multi-lateral Policy Division Marine Department November 2020

Enclosure: IMO Resolution MEPC. 324(75)

<sup>&</sup>lt;sup>2</sup> Table 1 of Regulation 21 of the Resolution

#### ANNEXES

#### PROVISIONAL LIST OF ANNEXES

- ANNEX 1 RESOLUTION MEPC.324(75) AMENDMENTS TO MARPOL ANNEX VI (SAMPLING AND VERIFICATION OF THE SULPHUR CONTENT AND EEDI)
- ANNEX 2 RESOLUTION MEPC.325(75) AMENDMENTS TO REGULATION E-1 AND APPENDIX I OF THE INTERNATIONAL CONVENTION FOR THE CONTROL AND MANAGEMENT OF SHIPS' BALLAST WATER AND SEDIMENTS, 2004
- ANNEX 3 RESOLUTION MEPC.326(75) 2020 GUIDELINES FOR MONITORING THE WORLDWIDE AVERAGE SULPHUR CONTENT OF FUEL OILS SUPPLIED FOR USE ON BOARD SHIPS
- ANNEX 4 RESOLUTION MEPC.327(75) ENCOURAGEMENT OF MEMBER STATES TO DEVELOP AND SUBMIT VOLUNTARY NATIONAL ACTION PLANS TO ADDRESS GHG EMISSIONS FROM SHIPS
- ANNEX 5 DRAFT AMENDMENTS TO MARPOL ANNEX VI (MANDATORY GOAL-BASED TECHNICAL AND OPERATIONAL MEASURES TO REDUCE CARBON INTENSITY OF INTERNATIONAL SHIPPING)
- ANNEX 6 TERMS OF REFERENCE AND ARRANGEMENTS FOR THE CONDUCT OF A COMPREHENSIVE IMPACT ASSESSMENT OF THE SHORT-TERM MEASURE BEFORE MEPC 76
- ANNEX 7 DRAFT AMENDMENTS TO THE AFS CONVENTION (ANNEXES 1 AND 4)
- ANNEX 8 DRAFT AMENDMENTS TO MARPOL ANNEX I (HEAVY FUEL OIL)
- ANNEX 9 DRAFT AMENDMENTS TO MARPOL ANNEXES I, IV AND VI (EXEMPTION OF UNSP BARGES FROM SURVEY AND CERTIFICATION REQUIREMENTS)
- ANNEX 10 BIENNIAL AGENDA OF THE PPR SUB-COMMITTEE FOR THE 2020-2021 BIENNIUM
- ANNEX 11 PROVISIONAL AGENDA FOR PPR 8
- ANNEX 12 STATUS OF OUTPUTS OF MEPC FOR THE 2020-2021 BIENNIUM
- ANNEX 13 ITEMS TO BE INCLUDED IN THE AGENDA OF MEPC 76
- ANNEX 14 STATEMENTS BY DELEGATIONS AND OBSERVERS

### ANNEX 1

#### DRAFT MEPC RESOLUTION

#### AMENDMENTS TO THE ANNEX OF THE PROTOCOL OF 1997 TO AMEND THE INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS, 1973, AS MODIFIED BY THE PROTOCOL OF 1978 RELATING THERETO

#### Amendments to MARPOL Annex VI

# (Procedures for sampling and verification of the sulphur content of fuel oil and the Energy Efficiency Design Index (EEDI))

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by international conventions for the prevention and control of marine pollution from ships,

RECALLING ALSO article 16 of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocols of 1978 and 1997 relating thereto (MARPOL), which specifies the amendment procedure and confers upon the appropriate body of the Organization the function of considering amendments thereto for adoption by the Parties,

RECALLING FURTHER that Circular MEPC.1/Circ.882 had requested the Parties to apply the amendments to appendix VI of MARPOL Annex VI related to the verification procedure for a MARPOL Annex VI fuel oil sample (regulation 18.8.2 or regulation 14.8) in advance of their entry into force,

HAVING CONSIDERED, at its seventy-fifth session, proposed amendments to MARPOL Annex VI concerning procedures for sampling and verification of the sulphur content of fuel oil and the Energy Efficiency Design Index (EEDI), which were circulated in accordance with article 16(2)(a) of MARPOL,

1 ADOPTS, in accordance with article 16(2)(d) of MARPOL, amendments to MARPOL Annex VI, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article 16(2)(f)(iii) of MARPOL, that the amendments shall be deemed to have been accepted on [1 October 2021] unless prior to that date, not less than one third of the Parties or Parties the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet, have communicated to the Organization their objection to the amendments;

3 INVITES the Parties to note that, in accordance with article 16(2)(g)(ii) of MARPOL, the said amendments shall enter into force on [1 April 2022] upon their acceptance in accordance with paragraph 2 above;

4 INVITES ALSO the Parties to consider the early application of the annexed amendments;

5 REQUESTS the Secretary-General, for the purposes of article 16(2)(e) of MARPOL, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Parties to MARPOL;

6 REQUESTS ALSO the Secretary-General to transmit copies of the present resolution and its annex to Members of the Organization which are not Parties to MARPOL.

#### ANNEX

### DRAFT AMENDMENTS TO MARPOL ANNEX VI (Regulations 1, 2, 14, 18, 20, 21 and appendices I and VI)

#### Regulation 1

Application

1 The full text of regulation 1 is replaced by the following:

"The provisions of this Annex shall apply to all ships, except where expressly provided otherwise."

## **Regulation 2**

Definitions

2 New paragraphs 52 to 56 are inserted after paragraph 51, as follows:

"52 Sulphur content of fuel oil means the concentration of sulphur in a fuel oil, measured in % m/m as tested in accordance with a standard acceptable to the Organization.<sup>1</sup>

53 *Low-flashpoint fuel* means gaseous or liquid fuel oil having a flashpoint lower than otherwise permitted under paragraph 2.1.1 of regulation 4 of chapter II-2 of the International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended.

54 *MARPOL delivered sample* means the sample of fuel oil delivered in accordance with regulation 18.8.1 of this Annex.

55 *In-use sample* means a sample of fuel oil in use on a ship.

56 *On board sample* means a sample of fuel oil intended to be used or carried for use on board that ship."

## **Regulation 14**

Sulphur oxides (SO<sub>X</sub>) and particulate matter

3 New paragraphs 8 to 13 and associated headings are inserted after existing paragraph 7 as follows:

## "In-use and on board fuel oil sampling and testing

8 If the competent authority of a Party requires the in-use or on board sample to be analysed, it shall be done in accordance with the verification procedure set forth in appendix VI to this Annex to determine whether the fuel oil being used or carried for use on board meets the requirements in paragraph 1 or paragraph 4 of this regulation. The in-use sample shall be drawn taking into account the guidelines

<sup>&</sup>lt;sup>1</sup> Refer to ISO 8754:2003 Petroleum products – Determination of sulphur content – Energy-dispersive X-ray fluorescence spectrometry.

developed by the Organization.<sup>2</sup> The on board sample shall be drawn taking into account the guidelines developed by the Organization.<sup>3</sup>

9 The sample shall be sealed by the representative of the competent authority with a unique means of identification installed in the presence of the ship's representative. The ship shall be given the option of retaining a duplicate sample.

## In-use fuel oil sampling point

10 For each ship subject to regulations 5 and 6 of this Annex, sampling point(s) shall be fitted or designated for the purpose of taking representative samples of the fuel oil being used on board the ship taking into account the guidelines developed by the Organization.

For a ship constructed before [1 April 2022], the sampling point(s) referred to in paragraph 10 shall be fitted or designated not later than the first renewal survey as identified in regulation 5.1.2 of this Annex on or after [1 April 2023].

12 The requirements of paragraphs 10 and 11 above are not applicable to a fuel oil service system for a low-flashpoint fuel for combustion purposes for propulsion or operation on board the ship.

13 The competent authority of a Party shall, as appropriate, utilize the sampling point(s) which is(are) fitted or designated for the purpose of taking representative sample(s) of the fuel oil being used on board in order to verify that the fuel oil complies with this regulation. Taking fuel oil samples by the competent authority of the Party shall be performed as expeditiously as possible without causing the ship to be unduly delayed."

## **Regulation 18**

Fuel oil availability and quality

4 Paragraph 8.2 is replaced by the following:

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

## **Regulation 20**

Attained Energy Efficiency Design Index (attained EEDI)

5 A new paragraph 3 is added after existing paragraph 2, as follows:

"3 For each ship subject to regulation 21 of this Annex, the Administration or any organization duly authorized by it shall report to the Organization the required and attained EEDI values and relevant information, taking into account the guidelines developed by the Organization,<sup>4</sup> via electronic communication:

<sup>4</sup> Refer to the 2018 *Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships* (resolution MEPC.308(73)), as amended by the Organization.

<sup>&</sup>lt;sup>2</sup> Refer to the 2019 Guidelines for on board sampling for the verification of the sulphur content of the fuel oil used on board ships (MEPC.1/Circ.864/Rev.1).

<sup>&</sup>lt;sup>3</sup> Refer to the 2020 Guidelines for onboard sampling of fuel oil intended to be used or carried for use on board a ship (MEPC.1/Circ.[xx])

- .1 within seven months of completing the survey required under regulation 5.4 of this Annex; or
- .2 within seven months following [1 April 2022] for a ship delivered prior to [1 April 2022]."

## **Regulation 21**

# Required EEDI

"

6 The existing table 1 (Reduction factors (in percentage) for the EEDI relative to the EEDI reference line) and the associated footnotes are replaced by the following:

		Phase 0	Phase 1	Phase 2	Phase 2	Phase 3	Phase 3
Ship Type	Size	1 Jan 2013	1 Jan 2015	1 Jan 2020	1 Jan 2020	1 Apr 2022	1 Jan 2025
Ship Type		- 31 Dec 2014	- 31 Dec 2019	– 31 Mar 2022	– 31 Dec 2024	and onwards	and onwards
	20,000 DWT and above	0	10		20		30
Bulk carrier	10,000 and above but less than 20,000 DWT	n/a	0-10*		0-20*		0-30*
	15,000 DWT and above	0	10	20		30	
Gas carrier	10,000 and above but less than 15,000 DWT	0	10		20		30
	2,000 and above but less than 10,000 DWT	n/a	0-10*		0-20*		0-30*
Tanker	20,000 DWT and above	0	10		20		30
	4,000 and above but less than 20,000 DWT	n/a	0-10*		0-20*		0-30*
Containership	200,000 DWT and above	0	10	20		50	
	120,000 and above but less than 200,000 DWT	0	10	20		45	
	80,000 and above but less than 120,000 DWT	0	10	20		40	
	40,000 and above but less than 80,000 DWT	0	10	20		35	
	15,000 and above but less than 40,000 DWT	0	10	20		30	

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		Phase 0	Phase 1	Phase 2	Phase 2	Phase 3	Phase 3
		1 Jan 2013		1 Jan 2020	1 Jan 2020	1 Apr 2022	1 Jan 2025
Ship Type	Size	_	_	_	—	and	and
		31 Dec 2014	31 Dec 2019	31 Mar 2022	31 Dec 2024	onwards	onwards
	10,000 and						
	above but less than 15,000 DWT	n/a	0-10*	0-20*		15-30*	
General Cargo ships	15,000 DWT and above	0	10	15		30	
	3,000 and above but less than 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 and above but less than 5,000 DWT	n/a	0-10*		0-15*		0-30*
Combination carrier	20,000 DWT and above	0	10		20		30
	4,000 and above but less than 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 and above but less than 2,000 DWT	n/a	0-5*,**		0-20*		0-30*
Ro-ro passenger ship***	1,000 DWT and above	n/a	5**		20		30
	250 and above but less than 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 and above but less than 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."

7 In table 2 (Parameters for determination of reference values for the different ship types), the first row corresponding to Ship type defined in regulation 2.25 is replaced by the following:

"2.25 Bulk carrier	961.79	DWT of the ship where DWT≤279,000	0.477"
		279,000 where DWT > 279,000	

#### Appendix I

## Form of International Air Pollution Prevention (IAPP) Certificate (Regulation 8)

#### Supplement to International Air Pollution Prevention Certificate (IAPP Certificate) Record of construction and equipment

8 New paragraphs 2.3.4 and 2.3.5 are inserted after paragraph 2.3.3 as follows:

"2.3.4 The ship [is fitted with designated] sampling point(s) in accordance with regulation 14.10 or 14.11..... $\Box$ 

2.3.5 In accordance with regulation 14.12, the requirement for fitting or designating sampling point(s) in accordance with regulation 14.10 or 14.11 is not applicable for a fuel oil service system for a low-flashpoint fuel for combustion purposes for propulsion or operation on board the ship

#### Appendix VI Fuel verification procedure for MARPOL Annex VI fuel oil samples (regulation 18.8.2)

9 The full text of Appendix VI is replaced by the following:

# "Verification procedures for a MARPOL Annex VI fuel oil sample (regulation 18.8.2 or regulation 14.8)

The following relevant verification procedure shall be used to determine whether the fuel oil delivered to, in use or carried for use on board a ship has met the applicable sulphur limit of regulation 14 of this Annex.

This appendix refers to the following representative MARPOL Annex VI fuel oil samples:

Part 1 – sample of fuel oil delivered<sup>5</sup> in accordance with regulation 18.8.1, hereafter referred to as the "MARPOL delivered sample" as defined in regulation 2.54.

Part 2 – sample of fuel oil in use,<sup>6</sup> intended to be used or carried for use on board in accordance with regulation 14.8, hereafter referred to as the "in-use

<sup>&</sup>lt;sup>5</sup> Samples taken in accordance with the 2009 Guidelines for the sampling of fuel oil for determination of compliance with the revised MARPOL Annex VI (resolution MEPC.182(59)).

<sup>&</sup>lt;sup>6</sup> Samples taken in accordance with the 2019 Guidelines for on board sampling for the verification of the sulphur content of the fuel oil used on board ships (MEPC.1/Circ.864/Rev.1)

sample" as defined in regulation 2.55 and "on board sample"<sup>7</sup> as defined in regulation 2.56.

## Part 1 – MARPOL delivered sample

1 General Requirements

1.1 The representative sample of the fuel oil, which is required by regulation 18.8.1 (the MARPOL delivered sample) shall be used to verify the sulphur content of the fuel oil delivered to a ship.

1.2 A Party, through its competent authority, shall manage the verification procedure.

1.3 A laboratory undertaking the sulphur testing procedure given in this appendix shall have valid accreditation<sup>8</sup> in respect of the test method to be used.

2 Verification Procedure Part 1

2.1 The MARPOL delivered sample shall be conveyed 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 record the condition of the seal of the sample as received on the test record; and
  - .3 reject any sample where the seal has been broken prior to receipt and record that rejection on the test record.

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

- .1 unseal the sample;
- .2 ensure that the sample is thoroughly homogenized;
- .3 draw two subsamples from the sample; and
- .4 reseal the sample and record the new reseal details on the test record.

2.4 The two subsamples shall be tested in succession, in accordance with the specified test method referred to in regulation 2.52 of this Annex. For the purposes of

<sup>&</sup>lt;sup>7</sup> Refer to the 2020 Guidelines for on board sampling of fuel oil intended to be used or carried for use on board a ship (MEPC.1/Circ.[xx])

<sup>&</sup>lt;sup>8</sup> The laboratory is to be accredited to ISO/IEC 17025:2017 or an equivalent standard for the performance of the given sulphur content test ISO 8754:2003.

this Part 1 verification procedure, the results of the test analysis shall be referred to as '1A' and '1B':

- .1 results '1A' and '1B' shall be recorded on the test record in accordance with the requirements of the test method; and
- .2 if the results of '1A' and '1B' are within the repeatability (r)<sup>9</sup> of the test method, the results shall be considered valid; or
- .3 if the results '1A' and '1B' are not within the repeatability (r) of the test method, both results shall be rejected and two new subsamples shall be taken by the laboratory and tested. The sample bottle shall be resealed in accordance with paragraph 2.3.4 after the new subsamples have been taken.
- .4 in the case of two failures to achieve repeatability between '1A' and '1B', the cause of that failure shall be investigated by the laboratory and resolved before further testing of the sample is undertaken. On resolution of that repeatability issue, two new subsamples shall be taken in accordance with paragraph 2.3. The sample shall be resealed in accordance with paragraph 2.3.4 after the new subsamples have been taken.

2.5 If the test results of '1A' and '1B' are valid, an average of these two results shall be calculated. The average value shall be referred to as 'X' and shall be recorded on the test record:

- .1 if the result 'X' is equal to or less than the applicable limit required by regulation 14, the fuel oil shall be considered to have met the requirement; or
- .2 if the result 'X' is greater than the applicable limit required by regulation 14, the fuel oil shall be considered to have not met the requirement.

## Table 1: Summary of Part 1 MARPOL delivered sample procedure

On the basis of the test method referred to in regulation 2.52 of this Annex						
Applicable limit % m/m: V	Result 2.5.1: X ≤ V	Result 2.5.2: X > V				
0.10	Met the requirement	Not met the requirement				
0.50						
	Result 'X' reported to 2 decimal places					

2.6 The final results obtained from this verification procedure shall be evaluated by the competent authority.

2.7 The laboratory shall provide a copy of the test record to the competent authority managing the verification procedure.

<sup>&</sup>lt;sup>9</sup> Repeatability (r) calculation in accordance with ISO 4259:2017-2 and as defined in the test method used.

## Part 2 – In-use and on board samples

#### 3 General Requirements

3.1 The in-use or on board sample, as appropriate, shall be used to verify the sulphur content of the fuel oil as represented by that sample of fuel oil at the point of sampling.

3.2 A Party, through its competent authority, shall manage the verification procedure.

3.3 A laboratory undertaking the sulphur testing procedure given in this appendix shall have valid accreditation<sup>10</sup> in respect of the test method to be used.

4 Verification Procedure Part 2

4.1 The in-use or on board sample shall be conveyed by the competent authority to the laboratory.

- 4.2 The laboratory shall:
  - .1 record the details of the seal number and the sample label on the test record;
  - .2 record the condition of the seal of the sample as received on the test record; and
  - .3 reject any sample where the seal has been broken prior to receipt and record that rejection on the test record.

4.3 If the seal of the sample as received has not been broken, the laboratory shall proceed with the verification procedure and shall:

- .1 unseal the sample;
- .2 ensure that the sample is thoroughly homogenized;
- .3 draw two subsamples from the sample; and
- .4 reseal the sample and record the new reseal details on the test record.

4.4 The two subsamples shall be tested in succession, in accordance with the specified test method referred to in regulation 2.52 of this Annex. For the purposes of this Part 2 verification procedure, the results obtained shall be referred to as '2A' and '2B':

.1 results '2A' and '2B' shall be recorded on the test record in accordance with requirements of the test method; and

<sup>&</sup>lt;sup>10</sup> The laboratory is to be accredited to ISO/IEC 17025:2017 or an equivalent standard for the performance of the given sulphur content test ISO 8754:2003.

- .2 if the results of '2A' and '2B' are within the repeatability (r)<sup>11</sup> of the test method, the results shall be considered valid; or
- .3 if the results of '2A' and '2B' are not within the repeatability (r) of the test method, both results shall be rejected and two new subsamples shall be taken by the laboratory and tested. The sample bottle shall be resealed in accordance with paragraph 4.3.4 after the new subsamples have been taken; and
- .4 in the case of two failures to achieve repeatability between '2A' and '2B', the cause of that failure shall be investigated by the laboratory and resolved before further testing of the sample is undertaken. On resolution of that repeatability issue, two new subsamples shall be taken in accordance with paragraph 4.3. The sample shall be resealed in accordance with paragraph 4.3.4 after the new subsamples have been taken.

4.5 If the test results of '2A' and '2B' are valid, an average of these two results shall be calculated. That average value shall be referred to as 'Z' and shall be recorded on the test record:

- .1 if 'Z' is equal to or less than the applicable limit required by regulation 14, the sulphur content of the fuel oil as represented by the tested sample shall be considered to have met the requirement;
- .2 if 'Z' is greater than the applicable limit required by regulation 14 but less than or equal to that applicable limit + 0.59R (where R is the reproducibility of the test method),<sup>12</sup> the sulphur content of the fuel oil as represented by the tested sample shall be considered to have met the requirement; or
- .3 if 'Z' is greater than the applicable limit required by regulation 14 + 0.59R, the sulphur content of the fuel oil as represented by the tested sample shall be considered to have not met the requirement.

On the basis of the test method referred to in regulation 2.52 of this Annex					
Applicable limit %m/m: V	Test margin value: W	Result 4.5.1: Z ≤ V	Result 4.5.2: V < Z ≤ W	Result 4.5.3: Z > W	
0.10	0.11	Met the	Met the	Not met the	
0.50	0.53	requirement	requirement	requirement	
		Result 'Z' reported to 2 decimal places			

## Table 2: Summary of in-use or on board sample procedure<sup>13</sup>

<sup>&</sup>lt;sup>11</sup> Repeatability (r) calculation in accordance with ISO 4259:2017-2 and as defined in the test method used.

<sup>&</sup>lt;sup>12</sup> Reproducibility (R) calculation in accordance with ISO 4259:2017-2 and as defined in the test method used.

<sup>&</sup>lt;sup>13</sup> Results of testing undertaken by the Company or other entities are outside the MARPOL process and hence should be considered within the approach given by ISO 4259:2017-2 regarding recipient drawn samples.

4.6 The final results obtained from this verification procedure shall be evaluated by the competent authority.

4.7 The laboratory shall provide a copy of the test record to the competent authority managing the verification procedure."

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