

**ANNEX 3**

**RESOLUTION MEPC.326(75)  
(adopted on 20 November 2020)**

**2020 GUIDELINES FOR MONITORING THE WORLDWIDE AVERAGE SULPHUR  
CONTENT OF FUEL OILS SUPPLIED FOR USE ON BOARD SHIPS**

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 (hereafter "the Committee") conferred upon it by international conventions for the prevention and control of marine pollution from ships,

RECALLING ALSO that at its sixty-first session, the Committee adopted the *2010 Guidelines for monitoring the worldwide average sulphur content of fuel oils supplied for use on board ships* by resolution MEPC.192(61), which were subsequently amended by resolution MEPC.273(69),

RECALLING FURTHER that, at its seventieth session, the Committee adopted resolution MEPC.280(70), *Effective date of implementation of the fuel oil standard in regulation 14.1.3 of MARPOL Annex VI*, confirming "1 January 2020" as the effective date of implementation for ships to comply with global 0.50% m/m sulphur content of fuel oil requirement,

RECOGNIZING the need to revise the *2010 Guidelines for monitoring the worldwide average sulphur content of fuel oils supplied for use on board ships* resulting from the entry into force of the 0.50% m/m sulphur content limit on 1 January 2020 and the potential types of fuel oils which would be used to comply with this limit,

NOTING that regulation 14.2 of MARPOL Annex VI requires that 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,

HAVING CONSIDERED, at its seventy-fifth session, the recommendation made by the Secretariat,

- 1 ADOPTS the *2020 Guidelines for monitoring the worldwide average sulphur content of fuel oils supplied for use on board ships*, as set out in the annex to the present resolution;
- 2 URGES Member Governments and interested organizations to make available the resources and expertise necessary for the implementation of the Guidelines;
- 3 INSTRUCTS the Secretariat to use the method set out in these Guidelines when monitoring the annual worldwide average sulphur content of fuel oils supplied for use on board ships; and
- 4 REVOKES the Guidelines adopted by resolution MEPC.192(61) as amended, as from this date.

## ANNEX

### 2020 GUIDELINES FOR MONITORING THE WORLDWIDE AVERAGE SULPHUR CONTENT OF FUEL OILS SUPPLIED FOR USE ON BOARD SHIPS

#### Preface

1 The primary objective of the Guidelines is to establish an agreed method to monitor the average sulphur contents of fuel oils supplied for use on board ships taking into account the sulphur limit as required by regulation 14 of MARPOL Annex VI.

#### Introduction

2 The basis for these Guidelines is provided in regulation 14.2 of MARPOL Annex VI. While regulation 14.2 of MARPOL Annex VI only refers to residual fuel, it was agreed to also monitor the average sulphur content of distillate fuel.

3 Following the entry into force of the 0.50% m/m sulphur content limit on 1 January 2020, MEPC 74 recognized that some of the compliant fuel oils may fall within the residual fuel category whereas other compliant fuel oils may fall within the distillate fuel category, thus agreed that the worldwide average sulphur content should be monitored as a consequence of the sulphur limits required by regulation 14 of MARPOL Annex VI.

4 In view of the above, the three following categories should be used for monitoring the worldwide average sulphur contents of fuel oil:

- .1 fuel oil not exceeding 0.10%;
- .2 fuel oil not exceeding 0.50%, but above 0.10%; and
- .3 fuel oil exceeding 0.50%.

#### Definitions

5 For the purpose of these Guidelines the following definitions should apply:

.1 *Residual fuel:*

Fuel oil for combustion purposes delivered to and used on board ships with a kinematic viscosity at 40°C greater than 11.00 centistokes<sup>1</sup> (mm<sup>2</sup>/s).

.2 *Distillate fuel:*

Fuel oil for combustion purposes delivered to and used on board ships with a kinematic viscosity at 40°C lower than or equal to 11.00 centistokes<sup>1</sup> (mm<sup>2</sup>/s).

.3 *Provider of sampling and testing services:*

A company that, on a commercial basis, provides testing and sampling services of bunker fuels delivered to ships for the purpose of assessing quality parameters of these fuels, including the sulphur content.

.4 *Reference value  $A_{ws\_ECA}$ :*

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<sup>1</sup> Reference is made to ISO 8217:2012.

The value of the worldwide average sulphur content for the total fuel oil (distillate and residual) with a sulphur content not exceeding 0.10% supplied for use on board ships, based on the first 3 years of data collected and as determined on the basis of paragraphs 6 to 12 of these Guidelines.

.5 *Reference value  $A_{ws\_Non-ECA}$ :*

The value of the worldwide average sulphur content for the total fuel oil (distillate and residual) with a sulphur content not exceeding 0.50%, but above 0.10%, supplied for use on board ships, based on the first 3 years of data collected and as determined on the basis of paragraphs 6 to 12 of these Guidelines.

.6 *Reference value  $A_{ws\_regulation4}$ :*

The value of the worldwide average sulphur content for the total fuel oil (distillate and residual) with a sulphur content exceeding 0.50% supplied for use on board ships, based on the first 3 years of data collected and as determined on the basis of paragraphs 6 to 12 of these Guidelines.

## **Monitoring and calculation of yearly and 3-year rolling averages**

### *Monitoring*

6 Monitoring should be based on calculation of average sulphur content of combined residual and distillate fuels on the basis of sampling and testing by independent testing services. Restarting for year 2020 the average sulphur content of the three categories given in paragraph 4 should be calculated. After 3 years the reference values for monitoring will be set as described in paragraph 12.

### *Calculation of yearly averages*

7 The basis of monitoring is the calculation, on an annual basis, of the average sulphur content of residual fuel and distillate fuel in each of the three categories in paragraph 4.

8 The calculation of the average sulphur content is executed as follows:

For a certain calendar year, the sulphur contents of the samples analysed<sup>2</sup> (one sample for each delivery of which the sulphur content is determined by fuel oil analysis) are recorded. The sulphur contents of the fuel oil samples analysed are multiplied by their corresponding mass, then summed, and then divided by the total mass of fuel oil analysed within each category as given in paragraph 4.

9 The mathematical formula for the method of calculation described is given in the appendix to these Guidelines.

10 As a basis for well-informed decisions, a graphical representation of the distribution of the global sulphur content plotted against the quantity of fuel oils associated with each incremental sulphur content range should be made available each year:

- .1 residual and distillate fuels for sulphur content below or equal to 1.00%: in terms of the % sulphur in increments of 0.10%; and

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<sup>2</sup> Reference is made to ISO 8754:2003.

- .2 residual and distillate fuels for sulphur content above 1.00%: in terms of the % sulphur in increments of 0.50%.

#### *Three-year rolling average*

- 11 The 3-year rolling averages should be calculated as follows:

$$A_{cr} = (A_{c1} + A_{c2} + A_{c3})/3$$

in which:

$A_{cr}$  = rolling average S-content of all deliveries tested over a 3-year period

$A_{c1}, A_{c2}, A_{c3}$  = individual average S-contents of all deliveries tested for each year under consideration

$A_{cr}$  is to be recalculated each year by adding the latest figure for  $A_c$  and deleting the oldest.

For the calculation of yearly average, all fuel oils less than 0.05% of sulphur should be calculated as 0.03%.

#### *Setting of the reference values*

- 12 The reference values of the worldwide average sulphur content for each category of fuel oil given in paragraph 4 supplied for use on board ships should be  $A_{wx}$ , where  $x = ws\_ECA, ws\_Non-ECA, ws\_regulation4$  and  $A_{wx} = A_{cr}$  as calculated in January of the year following the first 3 years in which data were collected on the basis of these Guidelines.  $A_w$  should be expressed as a percentage.

#### **Providers of sampling and testing services**

- 13 There are presently three providers of sampling and testing services under these Guidelines.

- 14 Any additional providers of sampling and testing services will be approved by MEPC in accordance with the following criteria:

- .1 be subject to the approval of MEPC, which should apply these criteria;
- .2 be provided with a technical and managerial staff of qualified professionals providing adequate geographical coverage and local representation to ensure quality services in a timely manner;
- .3 provide services governed by a documented Code of Ethics;
- .4 be independent as regards commercial interest in the outcome of monitoring;
- .5 implement and maintain an internationally recognized quality system, certified by an independent auditing body, which ensures reproducibility and repeatability of services which are internally audited, monitored and carried out under controlled conditions; and

- .6 take a significant number of samples on an annual basis for the purpose of globally monitoring average sulphur content of residual and distillate fuels.

**Standardized method of calculation**

15 Each of the providers of sampling and testing services should, before 31 January of the following year, provide the necessary information for the calculation of the average sulphur content of the residual and distillate fuels to the Secretariat of IMO or another agreed third party on the basis of a mutually agreed format, approved by MEPC. This party will process the information and will provide the outcome in the agreed format to MEPC. From the viewpoint of competitive positions, the information involved should be considered sensitive.

## APPENDIX

### CALCULATION OF AVERAGE SULPHUR CONTENT BASED ON QUANTITY

**Note:** wherever "all deliveries" are mentioned, this is meant to refer to all deliveries sampled and tested for sulphur and being taken into account for the purpose of monitoring.

#### Calculation weighted for quantity

$$A_{cj} = \frac{\sum_{i=1}^{i=N_j} a_i \cdot m_i}{\sum_{i=1}^{i=N_j} m_i}$$

in which:

$A_{cj}$  = the average sulphur content of all deliveries sampled worldwide in year j

$a_i$  = the sulphur content of individual sample for delivery i

$N_j$  = total number of samples taken in year j

$m_i$  = the mass of fuel oils with a sulphur content of  $a_i$ .

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