

RESOLUTION MEPC.183(59)
Adopted on 17 July 2009
2009 GUIDELINES FOR MONITORING THE WORLDWIDE
AVERAGE SULPHUR CONTENT OF RESIDUAL FUEL OILS SUPPLIED FOR USE
ON BOARD SHIPS

ANNEX 8

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THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

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

RECALLING ALSO that MARPOL Annex VI entered into force on 19 May 2005,

RECALLING FURTHER resolution MEPC.82(43) by which the Committee adopted the Guidelines for monitoring the worldwide average sulphur content of residual fuel oils supplied for use on board ships,

NOTING that the revised MARPOL Annex VI was adopted by resolution MEPC.176(58) which is expected to enter into force on 1 July 2010,

NOTING ALSO that regulation 14.2 of the revised MARPOL Annex VI requires monitoring of the worldwide average sulphur content of residual fuel oil supplied for use on board ships, taking into account guidelines developed by the Organization,

RECOGNIZING the need to revise the Guidelines for monitoring the worldwide average sulphur content of residual fuel oils supplied for use on board ships, in accordance with provisions of the revised MARPOL Annex VI,

HAVING CONSIDERED the 2009 Guidelines for monitoring the worldwide average sulphur content of residual fuel oil supplied for use on board ships prepared by the Sub-Committee on Bulk Liquids and Gases at its thirteenth session,

1. ADOPTS the 2009 Guidelines for monitoring the worldwide average sulphur content of residual 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 from 1 July 2010; and
3. REVOKES the Guidelines adopted by resolution MEPC.82(43), as from this date.

ANNEX

**2009 GUIDELINES FOR MONITORING THE WORLDWIDE AVERAGE
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ON BOARD SHIPS****Preface**

1 The primary objective of the Guidelines is to establish an agreed method to monitor the average sulphur content of residual fuel oils supplied for use on board ships.

Introduction

2 The basis for these Guidelines is provided in regulation 14.2 of Annex VI of MARPOL and in Conference Resolution 4 (in MP/CONF.3/35), on monitoring the worldwide average sulphur content of residual fuel oil supplied for use on board ships. Among the emissions addressed by Annex VI are emissions resulting from the combustion of fuels containing sulphur. An upper limit for the sulphur content of fuels was set and it was further decided to monitor the average sulphur content of fuel.

3 The independent testing companies analyse over 100,000 samples annually, which cover between 25% and 35% of all deliveries. From the data gathered by these testing services, the current average figures for the sulphur content of residual fuels can be derived. These figures are publicized regularly and are currently in the order of 2.4% by mass¹.

Definitions

4 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 50°C greater than or equal to 30.0 centistoke².

(2) *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.

(3) *Reference value A_w :*

The value of the worldwide average sulphur content in residual fuel oils supplied for use on board ships, based on the first three years of data collected and as determined on the basis of paragraphs 4 and 5 of these Guidelines.

¹ See document MEPC 59/4/1.

² Reference is made to ISO Standard 8217, 2005.

Monitoring and calculation of yearly and three-year rolling average

Monitoring

5 Monitoring should be based on calculation of average sulphur content of residual fuels on the basis of sampling and testing by independent testing services. Every year the average sulphur content of residual fuels should be calculated. After three years the reference value for monitoring will be set as described in paragraph 11.

Calculation of yearly average

6 At the basis of monitoring is the calculation, on an annual basis, of the average sulphur content of residual fuel.

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

For a certain calendar year, the sulphur contents of the samples analysed (one sample for each delivery of which the sulphur content is determined by fuel oil analysis) are recorded. The sulphur contents of the samples analysed are multiplied by the corresponding mass of fuel added up and then divided by the total mass of bunker analysed. The outcome of that division is the average sulphur content of residual fuel for that year.

8 As a basis for well-informed decisions a graphical representation of the distribution of the global sulphur content in residual fuels in terms of the % sulphur in increments of 0.5% sulphur plotted against the quantity of fuel associated with each incremental sulphur content range should be made available by 31 January of each year.

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

Three-year rolling average

10 A three-year rolling average 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 three-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.

Setting of the reference value

11 The reference value of the world wide average sulphur content of residual fuel oils supplied for use on board ships should be A_w , where $A_w = A_{cr}$ as calculated in January of the year following the first three 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

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

13 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 the Marine Environment Protection Committee, 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 to 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;
- .6 take a significant number of samples on an annual basis for the purpose of globally monitoring average sulphur content of residual fuels.

Standardized method of calculation

14 Each of the providers of sampling and testing services should provide the necessary information for the calculation of the average sulphur content of the residual 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 world wide 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 with a sulphur content of a_i

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