



भारत सरकार / GOVERNMENT OF INDIA
पोत परिवहन मंत्रालय / MINISTRY OF SHIPPING

नौवहन महानिदेशालय, मुंबई
DIRECTORATE GENERAL OF SHIPPING, MUMBAI

ENGINEERING CIRCULAR NO. 02 OF 2019

No: ENG/OPP-MARPOL-38(5)/04

Dated: 28th August, 2019

Subject: Compliance with the provisions of MARPOL Annex VI, Regulation 14

Note: This circular supersedes Engineering Circular 5 of 2018 dated 14th December 2018.

- 1) **Purpose:** The aim of this circular is to provide guidance to stakeholders for a consistent and smooth implementation towards compliance with the Global Sulphur Cap effective from **1st January 2020**. The following issues are covered by this circular:
- Preparation of a risk-based ship implementation plan and demonstrating compliance to requirements of MARPOL, Annex VI provisions by ship owners/operators.
 - Prohibition on the carriage of non-compliant fuel oil for combustion purposes for propulsion or operation on board a ship except for those vessels equipped with an Exhaust Gas Cleaning System (EGCS, otherwise known as a scrubber) and having been issued with a revised supplement in line with MEPC.305(73) prior to **1 March 2020**.
 - Procedure to be followed by an Indian Ship, if carrying non-compliant fuel oil on-board due to non-availability of compliant fuel oil or otherwise.
 - Procedure to be followed when the Exhaust Gas Scrubber mal-functions on an Indian Ship.
 - The Port State Control procedures to be adopted by Indian PSCO while conducting inspections of foreign ships for compliance to 0.5% Sulphur Cap requirements.
 - Procedure for dealing with foreign ships coming to Indian ports with non-compliant fuel on-board because of non-availability of compliant fuel or otherwise.
 - Procedure to handle unexpected issues related to the operation of an EGCS as a Port State and Flag State.
 - Instructions to approved Bunker Suppliers.
- 2) **Application:** This circular is applicable to:
- All seagoing Indian ships registered under Merchant Shipping Act, 1958.
 - All bunker suppliers registered with DG Shipping, GOI in accordance with Annex VI, Regulation 18 of MARPOL.
 - All foreign flag-vessels visiting Indian waters.

3) Requirement:

- a) As per regulation 14, the sulphur content of any fuel oil used on board ships outside Emission Control Areas shall not exceed 0.50% m/m on and after **1 January 2020**. The interpretation of "fuel oil used on board" includes fuel oil used in all emission sources including emergency equipment. The regulation applies to all ships irrespective of trading area viz. International and Domestic. This Regulation prohibits fuel oil with sulphur content more than 0.50% m/m being carried for use on board ships on/after 1st March 2020. The prohibition would not apply to carriage of non-compliant fuel oil as cargo.
- b) Vide Resolution MEPC.305 (73) the Supplement to IAPP Certificate is revised by addition of a new paragraph 2.3.3 to indicate compliance with above prohibition and hence the existing supplement to IAPP certificate need to be replaced with revised supplement prior to 1 March 2020.
- c) Though carriage of Fuel oil with sulphur content more than 0.50% m/m (non-compliant fuel oil) is allowed till 1st March 2020; the non-compliant fuel oil cannot be used on ships on/after 1st January 2020. The 'equivalent' compliance mechanism is permitted by MARPOL Annex VI, Regulation 4 and includes exhaust gas cleaning systems (EGCS). EGCS will allow higher sulphur fuels (>0.50% Sulphur m/m) to be burnt, with the excess sulphur scrubbed out of the uptake exhaust gas. The prohibition on the carriage of non-compliant fuel oil is not applicable to ships fitted with such 'equivalent' means of compliance.
- d) To prevent trade distractions due to non-availability of compliant fuel oil, Regulation 18 of MARPOL Annex VI provides that if faced with situation where compliant fuel is not available, a ship is not expected to deviate from the intended route or unduly delay the voyage to procure compliant bunker-fuel. Further (due to said reasons despite its best effort to procure compliant fuel oil) the ship can undertake intended voyage after bunkering non-compliant fuel oil, provided the Master/Owner/Operator inform the ship's Flag State and the port State of next port of call well in advance. To standardize this information a standard template called FONAR (Fuel Oil Non-Availability Report) has been developed and provided in MEPC 320(74). As per the guidance in the said MEPC Circular, the port States should take into account all relevant circumstances and the evidence presented to determine the appropriate action to take, including not taking control measures.

4) Responsibilities of Ship Owner as defined under ISM Code for vessels of 500 GT and above and the Registered Ship-Owner in other cases

- a) ISM code requires companies to assess all identified risks to its ships, personnel and the

environment and establish appropriate safeguards. To meet this requirement, all shipping companies are strongly advised to develop a ship specific implementation plan for transition to usage of fuel oil with Sulphur content not more than 0.50% m/m taking into consideration MEPC.1/Circ.878{Guidance on the development of a ship implementation plan for the consistent implementation of the 0.50% sulphur limit under MARPOL Annex VI}.

- b) The ship implementation plan is not a mandatory requirement and lack of a ship implementation plan or an incomplete ship Implementation plan should not be considered as "clear grounds" for a more detailed inspection (reference MEPC.1/Circ.878 paragraph 4). However, it may be noted that port State control authorities may consider ship implementation plan as an evidence of due diligence by the ship owner when verifying compliance with 0.50% m/m Sulphur limit requirement. So, it is urged that at-least all foreign going ships have a documented ship implementation plan through the ship's Safety Management System.
- e) All vessels registered under Merchant Shipping Act, 1958 are required to start using fuel oil with maximum Sulphur content not exceeding 0.50% m/m prior to 1st January 2020 unless fitted with EGCS. It is strongly advised that ships not fitted with EGCS are made free of non-compliant fuel oil by 01/01/2020 instead of waiting until 01/03/2020.
- d) It is expected that cleaning of bunker tanks, pipelines, filters etc. will be carried out to prevent compatibility and stability issues during change over and considering that, Port State Control Inspectors may consider verifying compliance through sampling & testing.
- e) To demonstrate compliance during Flag State Inspections and Port State Inspection, all ships irrespective of gross-tonnage to have on board a Bunker Delivery Note (BDN) which records details of fuel oil delivered and used on board for combustion purposes.
- f) All Recognized Organizations authorized to carry out International Air Pollution Prevention Certification (IAPP) on behalf of Indian Flag, are hereby advised, that revised IAPP Certificate with supplement as per MEPC.305 (73) is to be issued prior to **01/03/2020**, based on an undertaking from ship owner that the ship has started using compliant fuel oil and that there exist no non-compliant fuel oil on board ship {except in cases where an equivalent arrangement is fitted}.This will remain on-board concurrently with the existing IAPP Certificate. The revised Certificate shall carry noting stating "*This Certificate will be effective from 01/03/2020 and will supersede the existing certificate no.....dated....*" Validity of the revised certificate will be same as that of the existing Certificate

5) Equivalent arrangement and Responsibilities of Recognized Organizations

- a) Under "Equivalents" provisions of MARPOL Annex VI, ships may meet the SO_x requirements by using approved equivalent methods, such as an apparatus or piece of equipment (for example, Exhaust Gas Cleaning Systems or "scrubbers", which "clean" the emissions before they are released into the atmosphere).
- b) The IMO EGCS guidelines Resolution MEPC.259(68) {2015 Guidelines for Exhaust Gas Cleaning Systems} details the requirements for the testing, survey, certification and verification of scrubbers to ensure that they will produce emissions levels equivalent to the fuel sulphur content limits specified and are applicable to all fuel oil machinery installed on-board ships. The Guidelines provide specific requirements for measuring the sulphur content in the exhaust gas and monitoring wash water discharge quality, including pH changes and contaminant levels.
- c) For acceptance of EGCS as an equivalent on an Indian ship, all Recognized Organizations are required to verify following and specifically ensure compliance to MEPC 259(68) prior issuance of a new Supplement to the ship's International Air Pollution Prevention Certificate (IAPP):
 - i) Availability of a **So_x Emissions compliance plan (SECP)** approved by R.O on behalf of Indian Flag detailing the method of compliance for all fuel oil combustion machinery installed on board.
 - ii) **SO_x Emissions Compliance Certificate (SECC) issued by R.O. on behalf of Indian Flag Administration:** The EGC systems for the use of Scheme A to be subject to product certification survey, in order to demonstrate by testing that emissions from EGC systems meet the certified value specified by the manufacturer under the operating conditions and restrictions as given by EGCS Technical Manual for Scheme A (ETM-A). The certified value is at least to ensure that SO_x emissions from ships in operation are in compliance with the requirements given by MARPOL Annex VI regulations 14.1 and/or 14.4. Each EGC unit upon a satisfactory survey is to be issued with the Sox Emissions Compliance Certificate (SECC).
 - iii) The EGC systems { Certified under Scheme A or Scheme B} to be subject to an installation and initial survey upon installation on-board and before being put into service, in order to confirm that for each EGC unit certificates and relevant documents are complete, the EGC systems are installed in accordance with the requirements of ETM-A or ETM-B, and the performance of EGC systems in operation is in compliance with relevant

requirements as demonstrated by the on-board verification procedures. EGCS Technical Manual Scheme A. (ETM-A) or EGCS Technical Manual for Scheme B (ETM-B) as applicable duly approved by R.O. on behalf of Indian Administration to be available on board at the time of survey. An On-board Monitoring Manual (OMM) shall be prepared to cover each EGCS unit provided for the fuel oil combustion equipment, so that each unit can be identified and its compliance verified.

- iv) An EGC Record Book prepared by manufacturer and approved by RO for recording maintenance and service of the unit including like-for-like replacement. This EGC Record Book should be available at surveys as required and may be read in conjunction with engine-room logbooks and other data as necessary to confirm the correction operation of the EGC unit.
- v) A data recording and processing device meeting the requirements detailed in MEPC.259 (68).
- d) The EGCS shall be subjected to in service surveys as part of the ship surveys required under MARPOL Annex VI regulations 5 to ensure compliance of emissions from EGC systems while the ship is in service. In service, surveys include annual, intermediate and renewal surveys.
- e) Wash water resulting from exhaust gas cleaning systems shall not be led into the sea, including enclosed ports, harbour and estuaries, unless the wash-water meets the criteria set out MEPC 259(68) and applicable local regulatory requirements of the coastal state.
- f) Following details of all EGCS fitted on ships to be forwarded to PSC cell of directorate at psc-dgs@nic.in within 15 days after issuance of new supplement to IAPP Certificate for uploading on GISIS Module.
 - i) Type of equivalent compliance method ("Apparatus" to be selected for EGCS).
 - ii) Manufacturer of equivalent compliance method.
 - iii) IMO Number.
 - iv) Type or model number of equivalent compliance method (where appropriate).
 - v) Equipment (e.g Aux Engine, Boiler, Main Engine) to which equivalent compliance method has been applied.
 - vi) Start date of approval of equivalent compliance method.
 - vii) End date of approval by Party of equivalent compliance method, if approval is time limited.
 - viii) Additional information/reference

6) Guidance to Indian Port State Control Officers

- a) Foreign flagships coming to India to be targeted for inspection in accordance with IOMOU procedures and guidelines adopted by Directorate from time to time. Resolution MEPC 321(74) - 2019 Guidelines for port state control under MARPOL Annex VI Chapter 3 is to be taken into account while conducting initial and detailed PSC Inspections.
- b) **Procedures to deal with foreign ships coming to Indian Ports with non-compliant fuel:**
 - i) The PSCO should be guided by guidelines detailed in IMO Resolution MEPC.320 (74) 2019 for conduct of Port State inspections on ships faced with fuel oil non-availability.
 - ii) To minimize disruption to commerce, avoid delays and faster decision-making, the Directorate General of Shipping has set up a centralized decision-making desk at the Directorate. The Standard format of FONAR (Fuel oil Non-Availability Report) given in Resolution MEPC 320(74) is to be used by foreign ships coming to an Indian port with non-compliant fuel. The foreign flag ships coming to an Indian port with non-compliant fuel to send the FONAR to the PSC Cell of the Directorate at psc-dgs@nic.in and jurisdictional Mercantile Marine Office at-least 48 hours prior arrival along with date/time of arrival and date/time of expected berthing. Non-raising of a FONAR may be ground for detention.
 - iii) The vessel, with FONAR raised, must arrange for receipt of compliant fuel immediately after arrival to an Indian Port/Anchorage and change over to compliant fuel immediately on receiving the same.
 - iv) The foreign ships coming to India with FONAR will be mandatory inspected under Port State Inspection regime by the jurisdictional Mercantile Marine Department on arrival.
 - v) The ship should present to attending PSCO, a record of the actions taken to achieve compliance and provide evidence that it attempted to purchase compliant fuel. In case, PSCO is satisfied that every effort was made to source compliant fuel, the vessel may not be considered for detention subject to the approval of jurisdictional Principal Officer.
 - vi) To deal with remaining non-complaint fuel available on board, the PSCO to forward Flag recommendation along with quantity of non-compliant fuel and the result of Port State Control inspection to the PSC Cell of directorate for acceptance of the competent authority.
- C) For facilitating smooth and consistent implementation of the global 2020 Sulphur cap, IOMOU (Indian Ocean Memoranda of Understanding) will carry out an information campaign by issuing a letter of warning to ships during inspections from 1 November to 31 December 2019. The aim is to increase awareness of the ships' crew and company on the

matter and to remind and encourage compliance with Regulations 14 and 18 of MARPOL Annex VI from 1 January 2020. The letter of warning will be issued to ships found not yet ready for compliance with the 2020 Sulphur cap. All Indian Port State Control Officers are hereby advised to comply with the said decision taken at 20th meeting of IOMOU. A copy of letter of warning is available at IOMOU Web site.

c) **Procedures to deal with foreign ships coming to India with ECGS breakdown**

- i) MEPC.1/Circ.883 provides guidance to ships operating an exhaust gas cleaning system (EGCS) on handling unexpected issues arising due to malfunction of EGCS.
- ii) Any EGCS malfunction that lasts more than one hour or repetitive malfunctions should be reported to the flag and Port States Administration along with an explanation of the steps the ship operator is taking to address the failure. The ship operator should follow the process to identify and remedy the malfunction in the Exhaust Gas Cleaning System – Technical Manual that is approved at the time the EGCS is certified or in other documentation provided by the EGCS manufacturer.
- iii) All such cases are to be reported to jurisdictional Principal Officer. Ship to change over to compliant fuel oil within 4 hours of arrival.
- iv) The Principal Officer may decide on imposition of relevant port state control provisions based on submissions and/or after a conduct of Port State inspections of the ship.

d) **Indian ships faced with non-availability of compliant fuel oil:**

- i) To forward FONAR to the PSC cell of the directorate and the competent authority of the port of destination as soon as it is determined or becomes aware that it will not be able to procure and use compliant fuel oil. The PSC Cell of the directorate to be advised of all quantity of non-compliant fuel oil that will remain on ship after completion of the voyage with a procedure to deal with non-compliant fuel for concurrence.
- ii) In cases where Indian ships are likely to end-up with non-compliant fuel oil unintentionally and involuntarily, are to send the reason for ending up with such non-compliance and their proposed course of action for dealing with the non-compliant fuel oil to the PSC Cell of the Directorate and competent authority of the port of destination. Guidance for the same is available in MEPC.1/Circ.881 {Guidance for port state control on contingency measures for addressing non-compliant fuel}.

- e) **Indian ships faced with EGCS breakdown** may report malfunction that lasts more than one hour or repetitive malfunctions to the PSC Cell of the directorate along with an explanation of the steps the ship operator is taking to address the failure. The ship operator should follow the

process to identify and remedy the malfunction in the Exhaust Gas Cleaning System – Technical Manual that is, approved at the time the EGCS is certified or in other documentation provided by the EGCS manufacturer.

f) Instructions to approved Bunker Suppliers:

- i) The bunker suppliers are advised to adhere to MEPC.1/Circ.875/Add.1 {Guidance on best practices for fuel oil suppliers for assuring the quality of fuel oil delivered to ships} which provide for the best practices intended to assist bunker suppliers to ensure the quality of bunkers delivered to ships meet the agreed purchase specifications and applicable global and local regulations.
- ii) The information to be included in the Bunker Delivery Note (BDN) by approved Bunker suppliers to ships being supplied with fuel oil has been amended vide Resolution MEPC.286(71) and came into force with effect from 1st January 2019. It allows supply of fuel oil with sulphur content exceeding 0.50% m/m to ships on the basis of the purchaser's notification that the fuel oil is either intended to be used in combination with an equivalent means of compliance or is subject to a relevant exemption for a ship to conduct trials for sulphur oxides emission reduction and control technology research in accordance with regulation 3.2 of MARPOL Annex VI.
- iii) The Bunker Suppliers approved by Indian Administration are here-by advised:
 1. No fuel oil with sulphur content exceeding 0.50% m/m to be supplied to any ship (Indian or Foreign) without keeping a copy of supplement to IAPP Certificate indicating equivalent compliance for records.
 2. No fuel oil with sulphur content exceeding 0.50% m/m is to be supplied to any ship {Indian or Foreign and claiming to have a relevant exemption for a ship to conduct trials for sulphur oxides emission reduction and control technology research in accordance with regulation 3.2 of MARPOL Annex VI} without concurrence of the competent authority in Directorate General of Shipping.
- iv) Each case of supply of fuel oil with sulphur content exceeding 0.50% m/m is to be specially audited by Auditors of Indian Register of Shipping during Annual/Renewal audits for compliance to above requirements.

g) Procedure for verification of Sulphur content in Fuel Oil Sample:

- i) MEPC 74 (May 2019) approved amendments to MAPOL Annex VI for subsequent adoption by MEPC 75 (April 2020), with an expected entry into force date of mid-2021.
- ii) These amendments include definitions of sulphur content of fuel oil, MARPOL delivered

sample, in-use sample, on board sample, procedure for sampling and testing for verification of sulphur content in fuel oil and requirement of designated sampling point for in-use fuel oil. Ships will be required to designate sampling points no later than the first IAPP renewal survey that occurs 12 months or more after the entry into force of the regulation, expected to be in 2021.

- iii) MEPC 74 also approved MEPC.1/Circ.882{Early application of the verification procedures for a MARPOL Annex VI Fuel Oil Sample (Regulation 18.8.2 or Regulation 14.8)} which aims at ensuring a consistent approach to the verification procedures for fuel oil samples (MARPOL delivered sample, in-use and on-board samples). The purpose of the circular is to facilitate the use of the procedure ahead of the entry into force of the amendments in 2021.
 - iv) MEPC at its 74th session approved MEPC.1/Circ.864/Rev.1{Guidelines for on-board sampling for verification of the sulphur content of the fuel oil used on-board ships} a standardized method of drawing in-use fuel oil sample and handling it for the verification of the sulphur content of fuel oil.
 - v) As per Merchant Shipping Notice 3 of 2014{Registration as Bunker Suppliers}, approved Bunker Suppliers are required to confirm that the delivered products meet the prescribed standards, through appropriate Fuel oil analysis report from any test facility accredited to the National Accreditation Board for Testing and Calibration Laboratories (NABL).
 - vi) The Bunker Suppliers are hereby required to ensure that all testing laboratories should use sulphur content verification procedure (for MARPOL delivered fuel oil sample) detailed in MEPC.1/Circ. 882 while testing and reporting the same. IRS to ensure compliance with the same during Annual/Renewal Bunker supplier audits.
- h) Purchase of Fuel Oil in Indian Ports:**
- i) MEPC.1/Circ.875 provides guidance on best practice for fuel oil purchasers/users for assuring the quality of fuel oil used on board ships.
 - ii) Foreign and Indian ships purchasing fuel oil in Indian waters are here-by advised to be guided by the same. A list of Bunker Supplier approved by Indian Maritime Administration can be accessed at:
dgshipping.gov.in/Content/OtherAgenciesApprovedbyDGS.aspx.

- i) All stakeholders are advised to report data related to fuel oil delivered to ships, which have been subsequently found to be non-compliant with sulphur content and / or quality requirement of Regulations 14 and 18 of MARPOL Annex VI to Directorate General of Shipping at psc-dgs@nic.in

This Circular is issued with the approval of Chief Surveyor cum Additional DG (Engineering).

Sd/-

(Vikrant Rai)

Engineer & Ship Surveyor cum Dy.DG (Tech)

Enclosures:

1. Resolution MEPC.320 (74) – 2019 Guidelines for consistent implementation of the 0.50% sulphur limit under MARPOL Annex VI.
2. Resolution MEPC.321 (74) – 2019 Guidelines for port state control under MARPOL Annex VI Chapter 3.
3. MEPC.1/Circ.795/Rev.4 – Unified Interpretations to MARPOL Annex VI:
4. MEPC.1/Circ.864/Rev.1 2019 – Guidelines for on-board sampling for the verification of the sulphur content of the fuel oil used on board ships.
5. MEPC.1/Circ.881 – Notification on early application of the verification procedures for a MARPOL Annex VI fuel oil sample (Regulation 18.8.2 or 14.8).
6. MEPC.1/Circ.883 – Guidance on indication of ongoing compliance in the case of the failure of a single monitoring instrument, and recommended actions to take if the EGCS fails to meet the provisions of the 2015 EGCS guidelines (MEPC.259(68))
7. MEPC.1/Circ.884 – Guidance for best practices for member states / coastal states.
8. MEPC.1/Circ.875 – Guidance on best practices for fuel oil purchasers/users for assuring the quality of fuel oil used on board ships.
9. MEPC.1/Circ.878 – Guidance on the development of a ship implementation plan for the consistent implementation of the 0.50% sulphur limit under MARPOL Annex VI.
10. MEPC.1/Circ.880 – Reporting of availability of compliant fuel oils in accordance with Regulation 18.1 of MARPOL Annex VI.