



TECHNICAL CIRCULARS

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TO SHIP OWNER/SHIP MANAGER/INTERESTED PARTIES

GUIDELINES FOR CONSISTANCE IMPLEMENTATION OF 0.5% SULPHUR LIMIT UNDER MARPOL ANNEX VI

MARPOL Annex VI Regulation 14.1.3 through Resolution MEPC.280 (70), has implemented the sulphur content of any liquid fuel used on board the ship outside Emission Control Areas (ECAs) shall not exceed 0.5% m/m effective on or after 1 January 2020.

From 1 January 2020, all ships which the regulations applies are required to use liquid fuel oil with sulphur contents of 0.5 m/m or lower when operating outside ECAs areas unless the ship is fitted with equivalent means of compliance like Exhaust Gas Cleaning System (EGCS). Alternatively Liquefied Nitrogen Gas (LNG) may be used.

A ship if operating within an Emission Control Area, as per MARPOL Annex VI Regulation 14.4 the sulphur content of liquid fuel oil use on board that ship shall not exceed 0.10% m/m.

In-line with the above requirement, Resolution MEPC.305 (73) has been implement to prohibits the carriage of non-compliant liquid fuel oil use for combustion purposes for propulsion or operation on board a ship effective on or after 1 March 2020.

The Supplement to International Air Pollution Prevention Certificate was revised through Resolution MEPC.305 (73). In this case Ship Classification Malaysia (SCM) will issue a revised supplement after the vessel has started using compliance fuel and the non-compliance fuel has been removed from the ship except in cases equivalent arrangement if fitted.

Ships Classification Malaysia (SCM) will issue revised Supplement to International Air Pollution Prevention Certificate in following condition.

1. On-board issuance after verification of vessel has started using compliance fuel and the non-compliance fuel has been removed from the ship during annual, periodical, intermediate or renewal survey.
2. Issuance from SCM office if (1) is not practicable provided owner has submitted sufficient documented evidence that vessel has started using compliance fuel and the non-compliance fuel has been removed from the ship. In this regards, as minimum the owner is requested to submit followings;
 - a. Bunker Delivery Receipt (BDR) indicating the sulphur contents for previous three bunkering.
 - b. Attestation that cleaning of bunker tanks, pipelines, filters and etc., has been carried out during the change-over process from non-compliant liquid fuel to compliant liquid fuel.
 - c. A ship specific implementation plan for transition usage of non-compliance liquid oil fuel to compliance liquid fuel, if applicable.
 - d. Attestation or similar documented evidence if EGCS was fitted on-board.

The issuance of revised Supplement to International Air Pollution Prevention Certificate will begin starting from 01 January 2020, thus vessel owner are requested to plan whether to opt for option 1 or option 2 and notify SCM accordingly.

Instruction to Ship Owner

- Shipping companies are advised to develop a ship specific implementation plan for transition usage of non-compliance liquid oil fuel to compliance fuel taking into consideration of guidelines in MEPC.1/Circular 878 - Appendix 1. The implementation plan is not mandatory requirement, however Port State Control authorities may consider the ship implementation plan as evidence of due diligence by the ship owner when verifying compliance with 0.5% m/m sulphur limit requirement.
- All vessel to start using compliance fuel prior 1 January 2020 unless fitted with EGCS
- Cleaning of bunker tanks, pipelines, filters and etc., may be considered to prevent compatibility issues during change-over process as Port State Control Inspectors may verify compliance through sampling and testing if required. Please be advised that any modification in the fuel oil system to be approved by Classification Society and any modification of the engines is to be approved by engine manufacturer.
- Bunker Tank shall be clean prior loading of compliance fuel in order to remove the sediment and sludge. Option and method of tank cleaning can be reference in the attached document – Appendix 3.

References:

1. MEPC.280 (70) – Effective date of implementation of fuel oil standard
2. MEPC. 305 (73) – Prohibition of carriage non-compliance fuel on board.
3. MEPC.1-Circular 878 – Guidelines on development of ship implementation plan.

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APPENDIX 3

ADDITIONAL GUIDANCE FOR DEVELOPMENT OF THE SHIP IMPLEMENTATION PLAN (TANK CLEANING)

Introduction

1 Most ships will have been using high viscosity high sulphur fuel oil (HSFO) based primarily on residual fuel oils. Such fuels tend to adhere to the inside of fuel tanks forming layers of semi-solid substances containing sediments and asphaltenic sludge; such residues will also typically have solidified and settled in various parts of the fuel oil service system including pipelines, settling and service tanks.

2 The ship operator may choose to clean the fuel oil tanks of these residues before loading compliant fuel prior to 1 January 2020 based on the following considerations.

3 Some of the fuels complying with the 0.50% sulphur limit are expected to be very paraffinic due to crude sources of blending components and also a high content of distillate components. If such fuels are loaded into HSFO fuel tanks that have not been cleaned, there is a possibility that they could dissolve and dislodge sediments and asphaltenic sludge in storage tanks, settling tanks and pipelines, potentially leading to purifier and filter operational issues and in extreme cases fuel starvation resulting in loss of power.

4 Alternatively, ships have been using ship specific changeover procedures to effectively and safely load on top of existing fuel oil and gradually flushing through the fuel system until the sulphur content in the fuel oil is at a compliant level.

5 Should the ship operator determine it is appropriate to clean the ship's fuel oil tanks and system, the following considerations may need to be taken into account when making arrangements for tank cleaning.

Options for tank cleaning, approximate timelines and considerations

6 Fuel oil tanks are normally cleaned on a regular basis on ships to remove built-up sediments and sludge, usually during dry docking and whenever inspections of the fuel tanks are due. However, leading up to 1 January 2020, it would not be practicable for the majority of the global fleet that has been running on HSFO and decided to opt for tank cleaning to undergo dry docking during a very short period. Hence, other options for cleaning tanks and fuel oil systems during service may need to be considered.

7 The time and work involved in cleaning HSFO tanks cannot be defined precisely, as it will vary depending on how long it has been since the last time the tanks were cleaned, the condition of the tank coating and the effectiveness of the cleaning process itself. The estimates in this document may err on the side of caution as it is almost impossible to pinpoint at what stage the ship's fuel oil system is sufficiently clean to guarantee compliance.

Manual cleaning during dry docking

8 Time required varies; it can be done in 2 to 4 days per tank. In addition to cleaning tanks, all of the pipework in the fuel oil service system needs to be flushed through. Overall, it may take 1 to 2 weeks.

9 A ship that has had all its fuel oil tanks and fuel system cleaned can start loading compliant fuels and expect to be fully compliant right away.

10 However, if only the tanks have been cleaned in dry dock, it could take 2 to 5 days to flush through the pipework in the fuel oil service system to ensure full compliance with the 0.50% sulphur limit.

Manual cleaning during service

11 If tanks are to be cleaned manually during service, risk assessment and safety measures are paramount; refer to IMO resolution A.1050(27) on *Revised recommendations for entering enclosed spaces aboard ships*.

12 Time required will vary depending on tank size and the number of tanks, how long it has been since the last tank cleaning and the number of crew available to perform safe and complete tank cleaning operations. Tank cleaning can be performed by the ship's crew and/or by employing a riding crew for this purpose. It is always good practice to inspect the tank once cleaned to check its condition and to inspect heating coils, conduct pressure tests and undertake repairs as necessary.

13 If the cleaning is done by the ship's existing crew, it would likely take a minimum of 4 days per tank. For an average tank, a week should be allowed. If employing a riding crew to clean the tanks, if working in shifts, it would likely take a minimum of 2 days to clean a tank, but 4 days per tank should be allowed.

14 Tanks need to be empty before they can be cleaned, hence the time needed to drain tanks needs to be taken into account when estimating the overall time required.

15 In addition to cleaning tanks, all of the pipework in the fuel oil service system needs to be flushed. Flushing the remaining pipework and fuel oil service system after all tanks have been cleaned could take another 1 to 2 days.

16 The residues from tank cleaning should be retained on board until they can be disposed of correctly or disposed to shore reception facilities.

Cleaning tanks in service with specialized additives

17 As an alternative to manual cleaning, consideration can be given to gradually cleaning the sediments and asphaltenic sludge from HSFO tanks and fuel systems by dosing additives. There are successful examples of this approach for ships that needed to reallocate HSFO tanks to fuels complying with the 0.10% sulphur limit that took effect in ECAs in 2015.