

IAMSA BUREAU OF SHIPPING LLC**TECHNICAL DEPARTMENT**

TO: Marine Surveyors, Representatives, Owners, and Authorities.

SUBJECT: **Volatile Organic Compounds (V.O.C) Management Plan**

PURPOSE: For compliance with Regulation 15.6, Annex VI of MARPOL 73/78

APPLICATION: All Tanker ships

INTRODUCTION:

In tankers, during the loading procedure of cargoes and during their transportation, Volatile Organic Compounds (VOC) emissions commonly known as cargo vapors are emitted from cargo tanks into the environment. A tanker, to which regulation 15 of MARPOL Annex VI applies, carrying crude oil shall in accordance to resolution MEPC.176(58) minimize VOC emission to the extent possible. Such emissions can be reduced or anticipated either by the use of devices, equipment, and design modifications or by the optimization of the operational procedures.

Main objectives of the plan (in accordance to resolution MEPC.185(59)):

1. To develop written procedures for minimizing VOC emissions during the loading, sea passage and discharge of cargo;
2. To designate a person who will be responsible for implementing the plan and that person may assign appropriate personnel to carry out the relevant tasks;
3. To describe the training programs for the personnel that are required in order to ensure that the best management practices are always followed;
4. If the ship is equipped with VOC reduction devices or equipments, to ensure that these devices and equipments are used and are incorporated appropriately into the VOC management procedures;
5. To ensure the safety of the ship and crew by properly evaluating the procedures followed during the Loading, Carriage of relevant cargo, Discharge and Crude oil washing.

In the plan, the following topics are especially considered [1]: *Quote form MEPC.185(59)*

- the loading procedures should take into account potential gas releases due to low pressure and, where possible, the routing of oil from crude oil manifolds into the tanks should be done so as to avoid or minimize excessive throttling and high flow velocity in pipes;

- partial filling of tanks should be avoided to the extent possible since the existence of a large volume of gas above the oil in the tanks will contribute to increased VOCs in the gas that is vented and also to the VOCs remaining in the tanks after discharge. The VOCs remaining in the tanks after the discharge of cargo will be emitted due to displacement during the next loading;
- tank filling and discharge sequencing should be planned to minimize the time needed to fill or discharge each tank;
- the ship should define a target operating pressure for the cargo tanks. This pressure should be as high as safely possible and the ship should aim to maintain tanks at this level during the loading and carriage of relevant cargo;
- when venting to reduce tank pressure is required, the decrease in the pressure in the tanks should be as small as possible to maintain the tank pressure as high as possible;
- the amount of inert gas added should be minimized. Increasing tank pressure by adding inert gas does not prevent VOC release but it may increase venting and therefore increased VOC emissions; and

when crude oil washing is considered, its effect on VOC emissions should be taken into account. VOC emissions can be reduced by shortening the duration of the washing or by using a closed cycle crude oil washing unit.

APPROVAL & REQUIREMENTS:

Regulation 15 of Annex VI of MARPOL 73/78, as revised by IMO Resolution MEPC.176 (58) (hereinafter referred to as "revised Annex VI") regulate the VOC emissions from a tanker in designated port(s) or terminal(s) of a Party regulating such emissions. Regulation 15.6 requires that a tanker carrying crude oil shall have on board and implement a VOC Management Plan (VOC Plan) approved by the Administration in accordance with IMO resolution MEPC.185 (59). This Plan shall be specific to each ship. The aim of the VOC Plan is to identify the arrangements and equipment required to enable compliance with regulation 15.6 of the revised Annex VI and to identify for the ship's officers all operational procedures for VOC emission control.

VOC Plan will be written pursuant to the requirements in the revised Annex VI regulation 15.6, and it shall be developed in accordance with the Resolution MEPC. 185(59) "Guidelines for the Development of a VOC Management Plan", having taken into account the provisions of MEPC.1/Circ.680 "Technical Information on systems and operation to assist development of VOC Management Plans".

The VOC Plan will describe the specific arrangement, operations and conditions onboard a crude oil tanker with respect to the emission and ability to control VOC emissions. VOC Plan **is not a safety guide** and reference shall be made to other publications to evaluate safety hazards.

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