1. INTRODUCTION

1.1. General

This instruction applies to inspection of the requirements for machinery spaces of all ships for compliance with Annex I to the MARPOL Convention.

1.2. Goals and purpose

This document provides guidance to the PSCO on the inspection of MARPOL Annex I requirements, in particular related to:

- Reg. 12, Tanks for oil residues (sludge)
- Reg. 12A, oil fuel tank protection, and
- Reg. 13, standard discharge connection.
- Reg. 14, oil filtering equipment (OFE).
- Reg. 15, control of discharge of oil.
- Reg. 16, segregation of oil and water ballast and carriage of oil in forepeak tanks, and
- Reg. 17, oil record book part I – Machinery space operations

The purpose is also to investigate the operability of OFE systems as per Regulation 14, and to find out whether sludge has been discharged into port reception facilities, burnt in an incinerator or in an auxiliary boiler suitable for burning oil residues, mixed with fuel or other alternative arrangements.

1.3. Application

MARPOL Annex I applies to all ships, irrespective of size, unless expressly provided otherwise (reg. 2).

Ship certification requirements for Annex I are applied to any oil tanker of 150 gross tonnage and above and any other ships of 400 gross tonnage and above which are engaged in international voyages. (reg. 7)

Special Areas are defined in reg 1.11 and include the Baltic Sea, Black Sea, North West European waters and the Mediterranean Sea.

1.4. Relevant documentation

The following ship documents are relevant for this inspection:

- International Oil Pollution Prevention Certificate (IOPP)
- The IOPP Supplement
  - FORM A for ships other than oil tankers
  - FORM B for oil tankers
- Oil Record Book
  - Part I - Machinery space operations
  - Part II - Cargo / Ballast Operations for oil tankers

1.5. Additional considerations

In addition to the requirements of MARPOL Annex I, when ships are observed to be operating, or previously operated, in polar waters, special requirements are applicable (POLAR Code, PART II-A, Reg. 1.1 and 1.2) regarding operational and structural requirements on the topic of prevention of pollution by oil.

2. INSPECTION

2.1 Initial inspection

During the initial inspection the PSCO should verify the that the ship holds – where applicable - a valid IOPP certificate – supplemented by FORM A or B, , construction requirements and the oil filtering equipment.

2.1.1 Inspection of construction requirements

The PSCO should check that the ship is provided with a tank or tanks of adequate capacity to receive the oil residues (sludge) which cannot be dealt with otherwise, see section 3.1 of the IOPP supplement (FORM A or B as applicable). Other means of disposal of oil residues retained in sludge tanks are: Incinerator for oil residues (see section 3.2.1 of FORM A or B) and auxiliary boiler suitable for burning oil residues (see section 3.2.2 of FROM A or B).

Check that ships delivered on or after 1 August 2010 comply with regulation 12A, see sections 2A.1 and 2A.2 of FORM A or B.

Check that the ship is provided with a pipeline for the discharge of residues from machinery bilges and sludge tanks to reception facilities, fitted with a standard discharge connection, see section 4.1 of FORM A or B.

With regarding to the capacity of the sludge tanks, MEPC.1/Circ.867 should be taken into consideration. This means that the reduction of sludge tanks' capacity is not allowed even though incinerators, homogenizers or other recognized means onboard for the control of sludge may be installed on the ship.

2.1.2 Inspection of oil filtering equipment (machinery spaces)

Information on the OFE can be found in paragraph 2.2.1 or 2.2.2 of FORM A or FORM B of the IOPP Certificate of the ship.

All ships of 400 gross tonnage and above, regardless of age, must be fitted with 15 ppm oil filtering equipment (OFE). The OFE system of all ships discharging processed bilge water into the sea in Special areas must also have an automatic stopping device and an oil content meter, see section 2.3.3 of FORM A or B. For more details, see section 2. 3.2

However, the OFE system is not compulsory for ships which are engaged exclusively on the voyages within Special Areas of Annex I to the MARPOL Convention. If the vessel does not have an OFE system on board, the vessel should be waived of regulation 14.1 or 14.2, (see paragraph 2.5 of the FORM A or B). The waiver should be documented in FORM A or B and the vessel should have enough holding tank capacity for storage of all bilge water.

2.2 Clear grounds

"Clear grounds" to conduct a more detailed inspection include (but are not limited to):

1. the absence of principal equipment or arrangements required by the conventions;
2. the absence or unauthorized modification or principal equipment or arrangement as indicated on the IOPP Supplement (FORM A or B);
3. excessively unclean condition of the machinery spaces of the ship (this is also a clear grounds under SOLAS Chapter II-2 and the more detailed inspection should cover both areas);

4. information or evidence that the Master or crew is not familiar with essential shipboard operations relating to the prevention of pollution, or that such operations have not been carried out;
5. the absence of recordings of disposal of sludge;
6. evidence that false or incorrect entries have been made in the Oil Record Book.

2.3 More Detailed Inspection

A more detailed inspection concerning the MARPOL Annex 1 items could cover the following items.

2.3.1 Inspection of documentation related to the prevention of pollution by oil

2.3.1.1 PSCO's may examine the Oil Record Book in conjunction with the IOPP Supplement or other available records to ensure that accurate entries are being made. Examples of this may include:

- Ensuring that recorded quantities of sludge or oily bilge water in the Oil Record Book (under C entries) do not exceed retention or holding tank capacities as indicated in the IOPP Supplement (FORM A or B)
- Ensuring that recorded quantities of retention, transfer and discharge across Oil Record Book entries have been calculated correctly and all quantities indicated are accounted for across a time period.
- Ensuring that discharge times recorded in the Oil Record Book conform to activity times indicated on the OFE system. Comparing timings of discharge, tank retention quantities and system throughput to ensure that the OFE has been used correctly.

2.3.2 Inspection of construction requirements related to machinery spaces

2.3.2.1 Inspection of the sludge pipeline and the standard discharge connection

According to reg. 12.3 piping to and from sludge tanks shall have no direct connection overboard, other than the standard discharge connection referred to in reg. 13. This can be verified by inspecting the drawings of the sludge piping systems, or by visual inspection in the machinery room of the vessel, if such drawings are not available for inspection.

The standard discharge connection shall be in accordance with regulation 13 of Annex I to the MARPOL Convention.

2.3.2.2 Illegal by-passes in the OFE system

Illegal by-passes in the OFE system can be detected by visual inspection of the connections and pipelines in the machinery room of the vessel. No connections are permitted to pass the separator, the 15 ppm alarm, the 3-way-valve or the automatic stopping device, allowing bilges to be discharged directly overboard.

Bilge line from engine room spaces is only permitted directly overboard in case of an emergency e.g. flooding of engine room.

If suspecting illegal discharge, the PSCO should check flanges/bolts/connections, on line connecters, to the OFE and check whether they bear signs of being opened/bypassed. If strong suspicion of illegal discharge exists, the PSCO may request disconnecting the overboard line from OFE for inspection of inner oil film/sediments.

If illegal by-passes are found, the ship should be considered for detention and action should be taken to rectify the deficiency. The instruction “Investigations under MARPOL” may also provide advice around appropriate evidence to gather.

2.3.3 Inspection of Oil Filtering Equipment

2.3.3.1 Type approval of the OFE

Installations fitted to ships the keel of which were laid or which were at a similar stage of construction before 1 January 2005 should comply either:

.1 with the Recommendation on International Performance and Test Specifications for Oily water Separating Equipment and Oil Content Meters adopted under resolution A.393 (X) for equipment installed onboard on or after 14 Nov. 1978, as applicable; or

.2 with the Guidelines and specification adopted under resolution MEPC.60(33), for pollution prevention equipment installed onboard on or after 30 April 1994, as applicable.;

The separating/filtering equipment and the oil content meter installed on ships, the keels of which were laid or which were at a similar stage of construction after 1 January 2005, shall be approved in accordance with resolution MEPC.107(49). This also applies to new installations fitted on or after 1 January 2005 to ships, the keels of which were laid or which were at a similar stage of construction before 1 January 2005 in so far as is reasonable and practicable.

Resolution MEPC.205(62) - 2011 Guidelines and Specification for Add-on equipments for upgrading resolution MEPC.60(33) - compliant oil filtering equipment is not mandatory under MARPOL Annex I. But if it is installed, the type approval standard should be in compliance with this resolution.

2.3.3.2 Inspection of the alarm and an automatic stopping device

Information of the alarm and the automatic stopping device can be found in paragraph 2.2.2 of FORM A or FORM B of the IOPP Certificate of the vessel.

According to regulation 14.2 all ships of 10 000 GT and above must be fitted with an alarm and automatic stopping device.

In addition, bilge water from machinery spaces is only allowed to be discharged into the sea through any vessel’s OFE system in a Special Area of Annex I to the MARPOL Convention (reg. 15.3), if the system has an alarm and automatic stopping device.

Consequently, a ship of less than 10 000 GT, and not fitted with an alarm and automatic stopping device, cannot discharge bilge water in special areas. A holding tank must have been identified in the IOPP Certificate for the retention of oily bilge water on board while sailing in a special area.

Verifications may include:

- check that the 15 ppm alarm is correctly adjusted and operable: The crew is invited to demonstrate the operability of the 15 ppm alarm according to the instruction manual of the equipment.

- check that the 3-way-valve or stopping device is functioning: The crew is invited to demonstrate the operability of the 3-way-valve or stopping device according to the instruction manual of the equipment.

- Verify, that in accordance with Resolution MEPC.107 (49), as amended by resolution MEPC.285(70) paragraph 4.2.11, equipment type approval by this Resolution the 15 ppm bilge alarm accuracy has been checked at IOPP annual/intermediate/renewal surveys.

2.3.4 Inspection of control of discharge of oil

2.3.4.1 Discharge of sludge and/or bilge water into port reception facilities

Disposal of sludge and/or bilge in port reception facilities can be verified by inspecting the Oil Record Book. The Master of the vessel may also have obtained receipts or certificates of sludge/bilge disposal from the operators of the port reception facilities, but this is not compulsory according to the MARPOL Convention.

If the ship has not discharged sludge into port reception facilities, the reason for this should be investigated. If the vessel uses HFO, sludge should have been generated on board the vessel, and if sludge has neither been discharged into port reception facilities nor burnt in the vessel's incinerator or in the auxiliary boiler for a long period of time, there are sufficient reasons to believe that illegal discharges into the sea may have taken place.

2.3.4.2 Discharge of oily bilge water to the sea

Disposal of treated bilge water into the sea can be verified by inspecting the vessels documentation. The supplement to the IOPP (FORM A or B) Section 2.4 will indicate the maximum throughput of the OFE. The Oil Record Book can be examined for entries made under D (where 15.1 is indicated) and E. If the vessel is fitted with an OFE which complies with MEPC.107(49) the PSCO may also request an extract of system operation history where this standard requires the ability to download the information. These records can be compared to ensure that accurate entries are being made in the Oil Record Book, and that discharges of oily bilge water to the sea have been within the required oil content and throughput/discharge rate.

2.3.4.3 Capacity of the sludge and/or bilge water tank(s) for the next voyage

It can be estimated that the amount of sludge generated during the voyage is about 0.7 % - 1.2 % of the daily fuel oil consumption for ships using HFO, and about 0.5 % of the daily fuel oil consumption for ships using MDO.

If the capacity of the sludge and/or bilge water tanks is insufficient for the next voyage, the ship should be considered for detention and a sufficient amount of sludge should be discharged into port reception facilities before the vessel leaves the port.

Bilge water quantities cannot be estimated accurately. However there must be evidence for appropriate handling of oily bilge water in the Oil Record Book.

2.4 Expanded Inspection

2.4.1 Test of oil filtering equipment
Under the [PSCC Instruction on Type of Inspection,] a test of the oil filtering equipment is mandatory for all types of ships.

The PSCO should, as a minimum, carry out the checks under par. 2.3.3.2.

3. FOLLOW-UP ACTION

3.1 Deficiencies warranting detention

Examples of detainable deficiencies relating to MARPOL Annex I

1. Absence, serious deterioration or failure of proper operation of the oily-water filtering equipment, the oil discharge monitoring and control system or the 15 ppm alarm arrangements;
2. Remaining capacity of slop and/or sludge tank insufficient for the intended voyage;
3. Oil record book not available;
4. Unauthorized discharge bypass fitted;
5. Survey report file missing or not in conformity with the double hull and double bottom requirements.