PACIFIC MARINE SERVICES

Date of issued : 01 – March - 2016 – Pages no (6) **MARPOL Annex I, Chapter 8 - MEPC.186(59)**

P.M.S /STS/16	**PMS /STS/001/UAE**	Owner Company	**RED SEA PETROLEUM INC**
Date of implemented	**February 2013**	Identification Number	**5732911**
Name of Vessel	**RED SEA PEARL**	STS Approval No.	**S.T.S/001/UAE**
Flag	**TOGO**	Issuing Approval of STS/16	**PMS**
Classification Society	**P.M.S**	Body which carrying out the checked	**PMS**

(Guidelines For the Implementation of MARPOL Annex I, Chapter 8 – Prevention of Pollution During Transfer of Oil Cargo Between Oil Tankers at Sea.)

Reference: MARPOL Consolidated Edition 2011, Annex I, Chapter 8

Background.

The purpose of these Guidelines is to highlight the requirements regarding the operations plans, including plan approval, for transfer of oil cargo required under MARPOL Annex I Chapter 8. These Guidelines , to reflect the implementation of references to various Marine Environmental Protection Committee (MEPC) resolutions that have been fully incorporated into MARPOL 2011, the updating of footnote 2 identifying a more recent best practices guideline, and the addition of new sections 1.3, 1.4 and 1.5 providing verification responsibility and a timeframe by which updated guidance must be incorporated into a plan, with the rest renumbered.

APPLICABILITY (Regulation 40):

This Notice applies to oil tankers of 150 gross tonnage and above engaged in the transfer of oil cargo between oil tankers at sea (STS operations).

Exempt from the Requirements of this Notice are:

- Oil transfer operations associated with fixed or floating platforms, including drilling rigs; floating production, storage and offloading facilities (FPSOs) used for the offshore production and storage of oil; and floating storage units (FSUs) used for the offshore storage of produced oil1;
- Bunkering operations;
- STS operations necessary for the purpose of securing the safety of a ship or saving life at sea, or for combating specific pollution incidents in order to minimize the damage from pollution; an
- STS operations where either of the ships involved is a warship, naval auxiliary or other ship owned or operated by a State and used, for the time being, only on government non-commercial service. However each State shall ensure, by the adoption of appropriate measures not impairing operations or operational capabilities of such ships that the STS operations are conducted in a manner consistent, so far as is reasonable and practicable, with these regulations.

1 Annex I of MARPOL 2011, Chapter 7 and UNCLOS article 56 are applicable and address these operations.

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REQUIREMENTS

1 STS Operations Plan (Regulation 41)

1.1 Any oil tanker subject to MARPOL Annex I, Chapter 8 involved in STS operations shall carry on board an STS operations Plan prescribing how to conduct STS operations. Each oil tanker's STS operations Plan shall be approved by the Administrator. The STS operations Plan shall be written in both the working language of the ship and in English.

1.2 The STS operations Plan shall be developed taking into account the information contained in the best practice guidelines, as updated from time-to-time, for STS operations identified by the International Maritime Organization (IMO)[2]. The STS operations Plan may be incorporated into an existing **Safety Management System (SMS) required by Chapter IX** of the **International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended**, if that requirement is applicable to the oil tanker in question.

1.3 Where the STS operations Plan is a standalone document, the Recognized Organization (RO) which issues the vessel's International Oil Pollution Prevention (IOPP) certificate shall be responsible for verifying and/or approving the Plan including any relevant changes. Where the STS operations Plan is incorporated into the ship's SMS, it may be similarly verified and/or approved by the RO responsible for issuing the ship's Safety Management Certificate (SMC).

1.4 The presence of an up-to-date approved STS operations Plan is to be verified by the RO responsible for the IOPP certificate before issuing a new certificate at initial or renewal surveys or endorsing the existing certificate at annual/intermediate surveys.

1.5 Beginning 1 July 2015, the STS operations Plan shall be updated, taking into account information contained in subsequent versions of the guidelines references in paragraph 1.2, above. Updates shall be carried out by the date of the first annual, intermediate or renewal IOPP survey, following the latest revised version, as applicable. [3]

1.6 The person in overall advisory control of STS operations shall be qualified to perform all relevant duties, taking into account the qualifications contained in the best practice guidelines for STS operations as identified in paragraph 1.2 above.

1.7 Records[4] of STS operations shall be retained on board for three (3) years and be readily available for inspection by a Party to the present Convention.

1.8 Every oil tanker subject to MARPOL Annex I, Chapter 8 must operate in compliance with its approved STS operations Plan.

2- IMO's "Manual on Oil Pollution, Section 1, Prevention" as amended, and the latest version of the "Ship-to-ship Transfer Guide, Petroleum" which is the CDI/ICS/OCIMF/SIGTTO publication "Ship-to-Ship Transfer Guide for Petroleum, Chemicals, and Liquefied Gases," first edition 2013., as may be amended...

3- This is a National requirement that specifies when new guidance must be considered for incorporation into STS plans.

2 Notification (Regulation 42)

2.1 Each oil tanker subject to this chapter that plans STS operations within the territorial sea, or the exclusive economic zone of a Party to the present Convention shall notify that Party[5] not less than 48 hours in advance of the scheduled STS operations. Such notification shall include at least the following :

2.1.1- name, flag, call sign, IMO Number and estimated time of arrival of the oil tankers involved in the STS operations;

2.1.2- date, time and geographical location at the commencement of the planned STS operations;

2.1.3- whether STS operations are to be conducted at anchor or underway;

2.1.4- oil type and quantity;

2.1.5- planned duration of the STS operations;

2.1.6- identification of STS operations service provider or person in overall advisory control and contact information; and

2.1.7- confirmation that the oil tanker has on board an STS operations Plan meeting the requirements of Regulation 41.

2.2 Where, in an exceptional case, all of the information specified in section 2.1, above, is not available within the required timeframe of "not less than 48 hours in advance," the oil tanker discharging the oil cargo shall notify the Party to the present Convention, that an STS operation will occur. This notification must take place not less than 48 hours in advance; and the information specified in paragraph 2.1 above provided at the earliest opportunity.

2.3 If the estimated time of arrival of an oil tanker at the location or area for the STS operations changes by more than six (6) hours, the Master, owner or agent of that oil tanker shall provide a revised estimated time of arrival.

2.4 Consequential amendments to the International Oil Pollution Prevention (IOPP) Certificate, the Supplement to the IOPP Certificate and the Oil Record Book.

2.5 In the event that an STS service provider is utilised, they should be requested to provide documentary evidence of the intended Person in Overall Advisory Control (POACs) qualifications, experience and medical fitness.

2.6 The STS transfer area should be carefully chosen for a safe operation, in co-ordination with the appropriate authorities. In selecting the area, the following considerations should be taken into account, such as sea room, traffic density, water depth and the availability of a safe anchorage. A more detailed account of the factors to be considered when selecting an area for STS transfer may be found at Paragraphs Nos. 2.3 and 2.4 of the Guide and Paragraph No. 6.2.2.1 of the IMO Manual.

2.7 Where, in an exceptional case, STS operations are to take place within 48 hours' notice, the oil tanker shall notify the coastal state authority at the earliest opportunity.

4- Annex I of MARPOL 2011, Chapters 3 and 4; requirements for recording bunkering and oil cargo transfer operations in the Oil Record Book, and any records required by the STS operations Plan.

5- The national operational contact point as listed in document MSC-MEPC.6/Circ.12 of 31 December 2013 or its subsequent amendments.

2.8 The responsibility for the notification to the coastal state authority rests with the masters of the tankers involved in the STS operation.

2.9 The masters should also ensure that they have a copy of any acknowledgment from the coastal state authority to carry out the STS operation.

2.10 When STS transfers are undertaken in international waters, a navigational warning (securities) should be broadcast to all ships advising other traffic in the area of the names of the oil tankers; area and nature of operations; time and expected duration; and, the request for a wide berth.

3 Equipments & Preparation for STS operations

1. Prior to the commencement of the STS operation, the masters of the two tankers should exchange information regarding the availability, readiness and compatibility of the equipment to be used in the operation.
2. The oil tanker(s) should be provided with fenders, both primary and secondary, which should ideally comply with ISO 173575. The fenders can be secured to either vessel although landing on an unprotected section of the hull is less likely if they are secured to the manoeuvring ship
3. The master of the tanker to which the fenders are to be secured should request copies of the certificates demonstrating that the primary fenders have been tested in accordance with industry best practice, which is at intervals not exceeding two years. Secondary fenders do not require testing because they are not fitted with safety valves.
4. The hoses employed in the STS operation for the transfer of crude oils or petroleum should be specially designed and constructed for the product being handled and the purpose for which they are being used. They should comply with requirements of STS operations. A visual inspection of the hoses should be carried out before they are connected to the manifolds.
5. A visible inspection of the hoses should be carried out before connection to the manifolds to determine that they are free of any damage and in good order.
6. Mooring equipment, which includes lines, winches, fairleads and bitts, should be in good order and free of defects.
7. A prime consideration in mooring during STS operations is to provide bitts and fairleads for all mooring lines without the possibility of the ropes chaffing against each other, the ships involved or fendering arrangements
8. It is important that ships involved in STS operations are equipped with good quality mooring lines, efficient winches, well placed and sufficiently strong closed fairleads, bollards and other associated mooring equipment.
9. Only fairleads of the enclosed type should be used to ensure effective control of the mooring lines as the freeboards of the two ships changes during cargo transfer.
10. Ships equipped with steel wire or high modulus synthetic fiber mooring lines should fit rope tails of at least 11 meters long and have a dry breaking strength of at least 25% greater (or 37% greater if polyamide (nylon), than that of the lines to which they are attached.
11. Prior to the commencement of any STS operation, a joint plan of operation (JPO) should be developed to ensure that all parties involved, including the STS service provider, are in alignment with regard to how the operation is to be conducted. The masters of both oil tankers and the STS superintendent, if appointed, should make preparations before commencement of the operation, as detailed in Section No. 5 of the Guide and Paragraphs No. 6.4.1 and 6.4.4 of the IMO Manua
12. Communications with the master of the other oil tanker should be established at an early stage to co-ordinate the rendezvous and the method and system of approach, mooring and disengaging.
13. When the preparation of either oil tanker has been completed, the other vessel should be so informed. The operation may proceed only when both oil tankers have confirmed their readiness.
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15. The master should ensure that he is familiar with his STS operations Plan.
16. The completion of all checklists, examples of which are set out in the Guide, should be undertaken as appropriate prior to each stage of the operation. Once each checklist has been completed, each ship should confirm with the other that all items have been checked and found to be correct.

4 Contingency planning and emergency procedures

In light of the risk of accident and the potential scale of the commensurate consequences, the organisers of an STS operation are required to develop contingency plans for dealing with emergencies. Before committing to an STS operation, the parties involved should undertake a risk assessment covering operational hazards and the means by which they are managed. The output from the risk assessment should be used to develop risk mitigation measures and contingency plans covering all possible emergencies and providing for a comprehensive response, including notification of relevant authorities.

The tanker will have in place a generic risk assessment to cover STS operations. However, a specific risk assessment and contingency plan, which are local to the area of the scheduled STS operation, should be made or requested from the STS service provider. Particular reference should be focussed on regional notifications and additional resources available in the area, which could be mobilised in the event of an emergency.

5 Records of compliance

Records of all STS operations are to be noted in the Oil Record Book, (as well as any additional records required by the STS operation Plan) and retained on board for a period of at least three years. The records shall be made available for inspection to a coastal state authority i.e. Port State Control upon request.

6 Liability risks

Various risks are evident when engaging in STS operations, such as the physical safety of the two ships involved, to the shipboard personnel and the risk of pollution.

Risks are also associated with the cargo, in particular shortage claims given the potential difficulties of ullaging at sea. Further issues might arise from contamination.

An evident concern in the event of an incident is upon whom any liability falls, whether it be the master or POAC.

When considering compliance with MARPOL Annex I Chapter 8, further risks arise as follows:

- A tanker conducting an STS operation without notifying the coastal state authority could be in breach of MARPOL and her ISM Safety Management System (SMS)
- Vessels that conduct an STS operation without appointing a suitably qualified POAC will be in breach of their STS operations Plan and their SMS.
- Conducting an STS operation without verification of the appropriate certificates and test dates of the equipment to be used could be a breach of MARPOL and the vessels' SMS.

In the event that a proper risk assessment, specific to the locale of the STS operation, is not carried out an effective, co-ordinated, response to an emergency situation might not be possible in the event of such a situation.

7 Previous incidents / accident

1- The most common incident to occur during STS operations is a collision between the two ships while manoeuvring alongside each other or sailing. Collisions between the two ships typically occur for reasons which include the following :

- Incorrect approach angle between the manoeuvring vessel and constant heading (mother) ship.
- The manoeuvring ship approaching at excessive speed.
- Failure of one or both ships to appreciate meteorological and/or tidal conditions.

- The mother vessel failing to control excessive swinging while at anchor and/or manoeuvring ship failing to appreciate the swing Miscommunication between the vessels during manoeuvring.
- Engine failure of one of the tankers, particularly during mooring and un-mooring, can also result in a collision between the two ships.

Failure of mooring lines can occur because the mooring equipment is in poor condition. Excessive speed during mooring manoeuvres, extreme ship motion during the STS transfer operation and a poor mooring arrangement leading to chaffing of the lines can also lead to mooring line failure. Mooring line failure can cause fatal injuries to crew members, as well as damage or failure of the cargo hose(s).

2- The event of pollution can arise from situations, which might include :

1- Failure of cargo hoses and/or mooring lines
2- Deterioration of the weather conditions and/or sea state
3- Damage to the cargo hose(s(
4- Cargo overflow
5- Machinery failure on one of the oil tankers
6- Failure of pressure release valves, leading to tank explosion
7- Securing and/or disconnecting of cargo hoses in a seaway and
8- Cargo pump, valve or line failure on one of the oil tankers
9- The event of spillage of hydrocarbons can in turn lead to fire and/or explosion.

A risk to the safety of the crew also exists in the form of gas accumulations because airflows around the decks of ships involved in STS operations are prone to eddies that prevent normal dissipation. In this regard, normal tanker safety precautions should be maintained during cargo transfer operations.

To be provided with STS Operations Plan :-

- General Arrangement Plan
- Cargo Tank Arrangement and Capacity
- Cargo Handling System Plan and Manifold Details
- Anchor Handling and Mooring Arrangement Plan

The recognized organizations are all equipped to assist with drawing up plans. the Plans of Prevention of Pollution During Transfer of Oil Cargo Between Oil Tankers at Sea required Class or Flag approval. To assist owners of tankers for the MARPOL Annex I, chapter 8 prepared a set of guidelines on the development for the STS operation during transfer of oil The guidance is in IMO Resolution MEPC.186(59) & MEPC.59 and contains the information as required by Regulation 40,41 and 42 from the new Chapter 8 of Annex 1 of Marpol 73/78. and the text of these guidance in Circulars (P.M.S) on the website www.pmsclass.org.