

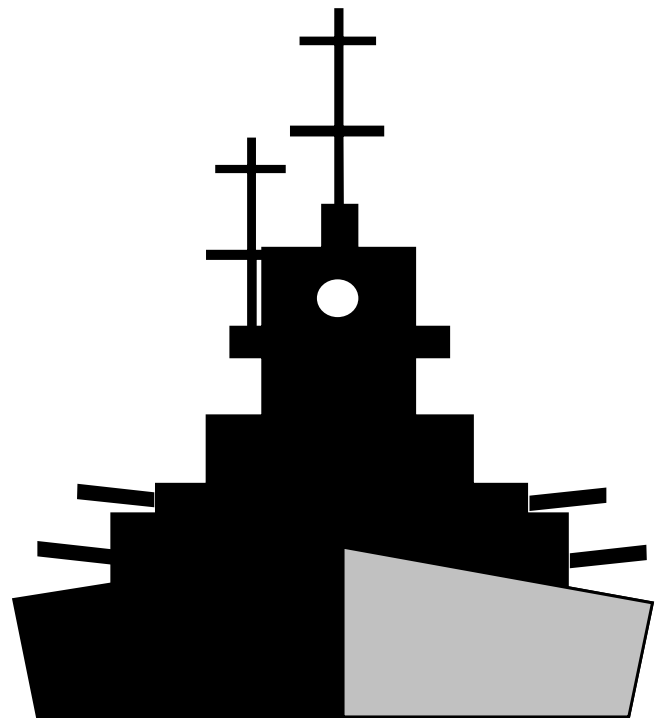
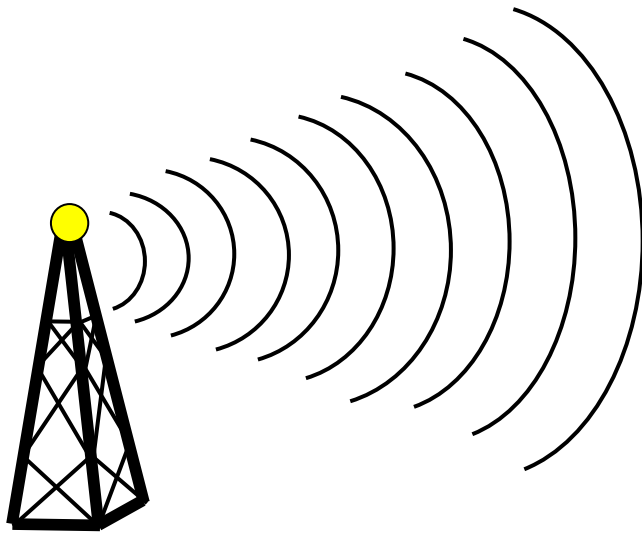


Singapore Refining Company Private Limited

Company Registration No: I97900084K

Berth Regulations

(July 2015 Edition)



Notice of Terms of Use

In addition to the terms of use of SRC's Berth Regulations website, please note that the information on this webpage is provided for information only and does not constitute the terms of use of any marine berth at SRC. SRC may in its absolute discretion not accept a vessel, notwithstanding that the specifications of the vessel conform to the information provided in this webpage. SRC may at any time without notice add to, update or modify the information on this webpage.

TABLE OF CONTENTS

MSP-5.01	WARNINGS	1
MSP-5.02	COMMUNICATIONS	2
MSP-5.03	FIRE NOTICE AND INSTRUCTIONS	3
MSP 5.04.01	TERMINAL INFORMATION AND SRC BERTH REGULATIONS	4
MSP-5.04.02	DEFINITION OF TERMS	4
MSP-5.04.03	BERTH AND BARGE FACILITIES	6
MSP-5.04.04	LAYOUT CHART OF SRC	7
MSP-5.04.05	BERTH INFORMATION	7
MSP-5.04.06	IMPORTANT NOTE	8
MSP-5.05.01-E	APPLICATION/CONDITION OF ACCEPTANCE/CHARGES	10
MSP-5.05.02	SHORE LEAVE AND SECURITY	11
MSP-5.05.03	RECEIPT AND DISPLAY OF REGULATIONS	11
MSP-5.05.04	PRE-ARRIVAL INFORMATION	12
MSP-5.05.05	MOORING/GANGWAY AND ACCESS	13
MSP-5.05.06	CONDITIONS TO BE OBSERVED DURING OPERATIONS	14
MSP-5.05.07	GENERAL SERVICES - SMALL CRAFT/STORES/BUNKERING	16
MSP-5.05.08	TANK WASHING & GAS-FREEING / INERT GAS OPERATION / ENTRY INTO VESSEL'S TANKS	18
MSP-5.06.01-E	HEALTH HAZARDS / POLLUTION	19
MSP-5.06.02	FIRE PRECAUTIONS	19
MSP-5.07.01	DEFINITION/PRODUCT HANDLED/TYPE OF VESSEL/BERTH FACILITIES	22
MSP-5.07.02	EMERGENCY PROCEDURES / MINIMUM REQUIREMENTS FOR MASTER AND RATINGS	22
MSP-5.07.03	PRE-OPERATIONS MEETING AND INSPECTION	23
MSP-5.07.04	OPERATIONAL PROCEDURES	24
MSP-5.08	GUIDELINES FOR APPLICATION OF PILOTAGE EXEMPTION	25
MSP-6.0	APPENDIX A - RIGGING OF EMERGENCY TOWING WIRES	26
MSP-6.0	APPENDIX B - MINIMUM MOORING PATTERN FOR ALL VESSELS AT SRC BERTHS	27
MSP 6.0	APPENDIX C - SKETCH OF LPG LOADING SYSTEM AT BERTH NO. 1	29
MSP-6.0	APPENDIX D - APPROVED SMOKING ROOM	30

1. Smoking Restrictions

Smoking is strictly prohibited on the berths and onboard tankers alongside, except in those enclosed spaces aboard ship specifically designated by the Master and approved by SRC as "Smoking Areas". Failure to comply with this regulation can result in cessation of operations and/or unberthing pending complete investigation and receipt of written assurance from the Master that effective controls have been established.

The company reserves the right to prohibit smoking at any time in any place within the restricted area.

2. Drugs/Alcohol

If it is suspected that use of drugs and/or alcohol may affect safety at the terminal, operations will cease until the matter has been reported to and fully investigated by relevant authorities.

Operations will not resume until the company considers it is safe to do so and delay or cancellation in a vessel's departure could result and will be for the account of the vessel.

3. Pollution

It is an offence to :

- (a) spill oil
- (b) emit excessive funnel smoke
- (c) dump garbage/oily sludge/scales from tanker cleaning operation

All incidents will be investigated and prosecution could result.

MSP-5.02 COMMUNICATIONS

IMPORTANT TELEPHONE NUMBERS AND VHF RADIO CHANNELS		
INDEX	TELEPHONE	VHF RADIO
Fire/Ambulance/Police	222 (using SRC internal phone only)	-
OM Shift Supervisors/Control Room	63570143	Channel 9 (via SRC Walkie-Talkie set)
Shift Manager	63570254	-
Environmental Pollution	63570246	-
MPA Port Enforcement Section	9-63252488 / 89	}Channel 7
(For Marine Emergency)	9-62203803	}
MPA Jurong Control (Port Operations)	9-67737455	Channel 22
MPA Port Operations Centre	9-63252493 / 94	Channel 12

NOTE:

1. Under normal circumstances, a berth technician should be stationed at the Berth Office located at each jetty. A shore telephone is available at each berth office for communication.
2. The above VHF Radio Stations offer a 24-hour service and operate on the Hague Plan Frequency.
3. A walkie-talkie radio set shall be placed onboard the ship for normal and emergency use. This mode of communication should be utilised first. Form No. F/OMM012 to be completed.

1. DO NOT HESITATE TO RAISE THE ALARM

If a fire breaks out on a tanker while at our terminal, the tanker must raise the alarm by sounding the recognised alarm signal consisting of a series of long blasts on the ship's whistle, each blast being not less than 10 seconds in duration, supplemented by a continuous sounding of the general alarm system.

In addition, **Shore Emergency Services** shall be contacted as follows:

- 1.1 Shore Internal Phone Nos. 222 at the Jetty Head.
- 1.2 VHF Channel 5 (Hague Plan Frequency) through Oil Movements.
- 1.3 If a walkie-talkie radio is available, this mode of communication should be utilised first, through Oil Movements.

2. ACTION - SHIP**2.1 Fire On Your Ship**

- (a) Raise the alarm
- (b) Fight fire and prevent spreading
- (c) Inform Oil Movements Control Room and Shore Emergency Services (as above). Be precise but brief with your message
- (d) Cease all cargo operations and then close all valves
- (e) Assess extent of fire. Standby to disconnect loading arms
- (f) Bring main engines and crew to standby ready to unberth.

2.2 Fire On Other Ship Or Ashore

Inform Oil Movements Control Room, then standby and when instructed:

- (a) Close all valves once cargo operations have stopped
- (b) Assist with disconnecting loading arms
- (c) Bring main engines and crew to standby ready to unberth.

3. ACTION - TERMINAL**3.1 Fire On A Ship**

- (a) Raise the alarm
- (b) Maintain contact with ship
- (c) Cease all cargo operations and then close all valves
- (d) Standby to disconnect loading arms but ensure it is safe to do so if action is executed
- (e) Assist with Fire Fighting
- (f) Implement Refinery Emergency Plan (Refer to SRC Safety Regulation, Section E)

3.2 Fire Ashore

- (a) Raise the alarm
- (b) Fight fire and prevent fire spreading
- (c) Inform all ships at affected berths and maintain contact
- (d) Cease all cargo operations and then close all valves
- (e) Standby to disconnect loading arms but ensure it is safe to do so if action is executed
- (f) Implement Refinery Emergency Plan (Refer to SRC Safety Regulation, Section E)

MSP 5.04.01 TERMINAL INFORMATION AND SRC BERTH REGULATIONS

These Regulations apply to all vessels calling at SRC, Jurong Island. Additional regulations relating to the loading of LPG are also contained in these Regulations.

In addition to the observance of the Company's Regulations as printed herewith, Masters should note the Byelaws of the Maritime and Port Authority of Singapore (MPA). They should familiarise themselves with these Byelaws and must ensure that both Byelaws and Company Regulations are brought to the attention of officers and crew and their provisions strictly observed.

In the event of any conflict between the Company's Regulations and Byelaws of the Maritime and Port Authority of Singapore, the latter shall prevail.

It must be appreciated that oil and liquid gas spillage and vapour release are seriously viewed by Government, MPA and the Terminal Operator. Spillage and vapour release will be investigated by the appropriate authorities and, apart from the Master and/or Owners of the vessel being charged with the cost of cleaning up any spill or in dealing with a vapour release emanating from the vessel and the consequences thereof, the Master and/or Owner may be liable to prosecution and delay to the vessel could well arise.

Masters are therefore required to ensure that every precaution is taken to prevent spillage and vapour releases at SRC Terminal.

MSP-5.04.02 DEFINITION OF TERMS

In these regulations, these words and expressions have the following meanings:

1. Loading Master

The person shall be the Company's appointed Oil Movements Area Manager or his authorised representative.

2. The Company

Singapore Refining Company Private Limited, Jurong Island, Singapore.

3. Port Master

The Port Master appointed by the Maritime and Port Authority of Singapore and his authorised officers.

4. Hot Work

Any work which could generate heat or electrical or mechanical sparks of sufficient temperature to ignite flammable gases, liquids or other materials.

5. Liquefied Petroleum Gases

Petroleum Fractions or derivatives which is gaseous at ambient temperature and pressure, but which may be readily liquefied by pressurisation or refrigeration.

6. Main Deck

The main deck of a tanker is the steel plating forming the top of the cargo tanks, hold spaces, ballast tank, cofferdams and pump rooms.

7. **Master**

“The Master” shall be understood to mean the Master or his duly authorised deputy or any person who for the time being is in charge of the vessel.

8. **Naked Lights**

Open flames and fires, exposed incandescent material, lamps and electrical equipment of a non-approved pattern or any other unconfined source of ignition.

9. **Operations**

The loading/discharging and transfer of petroleum and chemicals, ballasting/deballasting, bunkering, tank cleaning and gas freeing and any other activity normally associated with handling petroleum cargoes.

10. **Petroleum**

Crude Oil and its derivatives, whether solid, liquid or gaseous.

11. **Volatile Petroleum**

Volatile petroleum shall be any petroleum having a Flash Point below 60°C, as determined by the closed cup method of testing. However, if a non volatile cargo is being handled at a temperature above its flash point minus 5°C, it should be treated as volatile petroleum. Non volatile petroleum shall be any other petroleum.

12. **Regulations**

The Regulations contained within this document and any amendment, addition or modification from time to time attached hereto and made part hereof.

13. **Responsible Ship’s Officer**

The Master or any officer to whom the Master may delegate responsibility for any operation or duty on the ship.

14. **Restricted Area**

The Area enclosed within the Company’s boundary fences, and the water within 100m of any jetty or structure operated by the Company.

15. **Small Craft**

Any agent/crew ferry boat, lighter, bumboat, tug other than those tugs licensed by MPA (e.g. PSA Marine) for tanker berthing/unberthing operations or non-tank vessel not over 100 gross tonnage (GT).

16. **Tanker**

A vessel designed to carry petroleum and/or chemical cargo in bulk, including a combination carrier when being used for this purpose.

17. **Vessel**

Any ship, craft or other floating navigable object.

18. Existing Tanker

A tanker constructed before 1 September 1984 (as per Safety of Life At Sea, SOLAS, Chapter 11-2 Reg. 60).

19. New Tanker

A tanker constructed on or after 1 September 1984 (as per SOLAS Chapter 11-2 Reg. 60).

MSP-5.04.03 BERTH AND BARGE FACILITIES

Singapore Refining Company Private Limited (SRC) is situated on the northern portion of Jurong Island and has five Oil Handling Berths and one Dry Cargo/Oil Berth. The berths are within the port limit of Singapore and, as such, all tankers berthing or unberthing are placed under PSA Marine pilotage. However, certain harbour craft and regular coastal vessels may be granted pilotage exemption by both MPA and SRC as per MSP-5.08. Loading of oil is performed through hard loading arms which are free standing and manually operated except for Berth No. 1, 2, 6 and 7 which are hydraulically operated. The shipboard arm has an end assembly swivel and fitted mainly with manually operated cam-lock coupling connection except for Berth No. 6 which is hydraulically operated.

1. Oil Handling & Dry Cargo Berths (Berth Nos. 1 to 3 and 5 to 7)

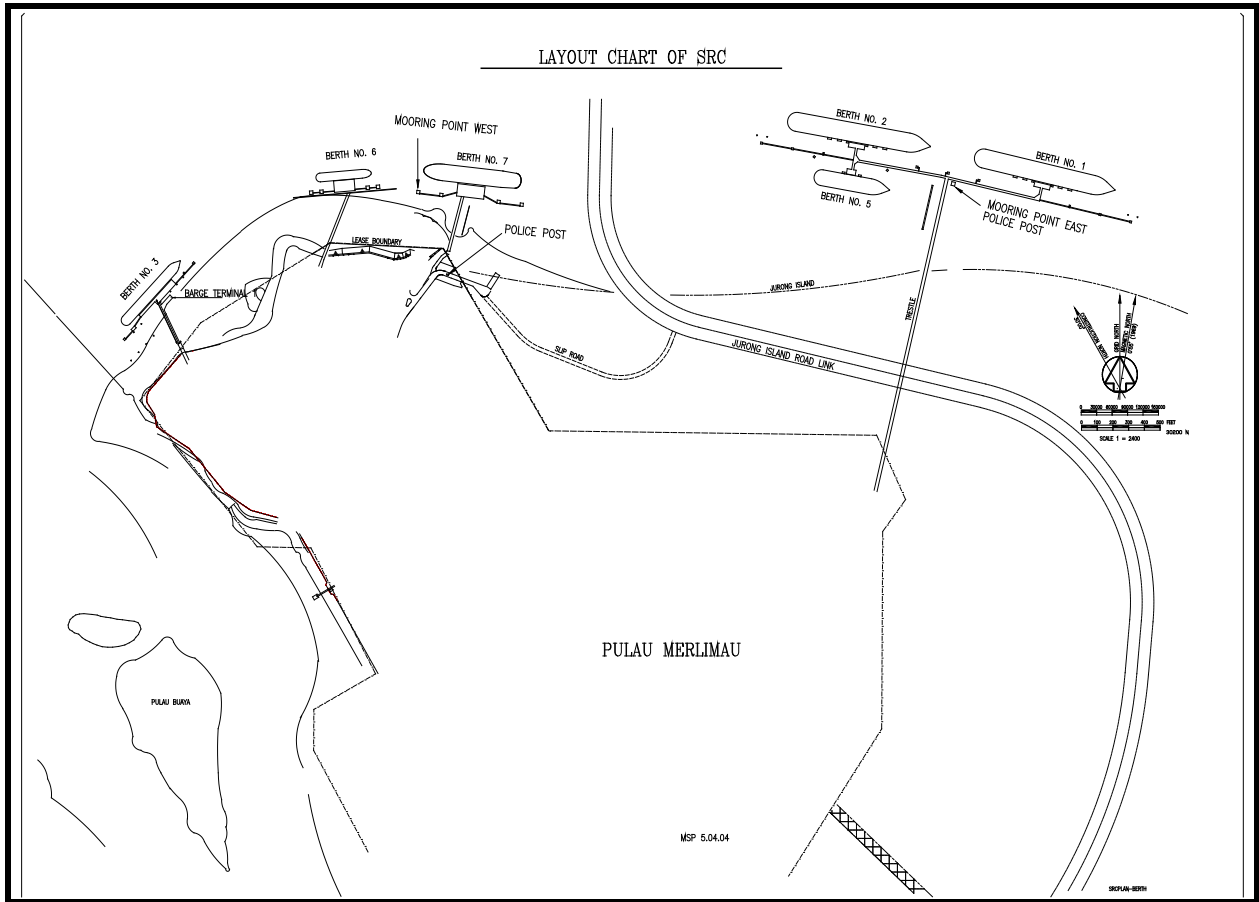
For details, please refer to Berth Information in MSP-5.04.05

2. VLCC Jetty No. 1, Jurong Island

Crude oil for the Refinery can also be received through the VLCC Jetty 1 which is situated at Jurong Island, bearing of Sultan Shoal Lighthouse 295°T, distance off 2.0 nautical miles. The VLCC Jetty is owned by JTC/PSA Corporation and operated by Tanker Mooring Services Co. Pte.Ltd. The first VLCC discharged at Jetty 1 was on 12 Dec 2002 and it replaced the previous SPM situated at Silat Sinki owned by PSA Corporation and operated by TMS.

On 30 Dec 2013, SRC took over the ownership and operations of the VLCC Jetty 1.

MSP-5.04.04 LAYOUT CHART OF SRC



MSP-5.04.05 BERTH INFORMATION

SRC Berths	LOA of Vessel	Maximum Displacement of Vessel	Depth Alongside	Controlling Depth in Approaches	Products Handled
1	Max : 290 m Min : 90 m	105,000 MT	15.7 m (2007)	13.9 m	LPG, Crude, FO, CN, Jet A1, JP-5, Diesel, Reformate, Unleaded Mogas.
2	Max : 290m Min : 90 m	105,000 MT	15.3 m (2007)	13.9 m	Crude, FO, CN, Jet A1, JP-5, Diesel, MTBE, Reformate, Unleaded Mogas.
3	Max : 160 m Min : 45 m	20,000 MT	(10.7m) (2007)	12.1 m	FO, Diesel, Bulk Asphalt, Flaked Sulphur.
5	Max : 130m Min : 62 m	10,667 MT	10.6 m (2007)	8.3 m	FO, Diesel, Jet A1, Unleaded Mogas, Reformate, LPG.
6	Max : 126 m Min : 40 m	18,000 MT	11.0 m (2013)	12.1 m	FO, Diesel, Jet A1, Reformate, Unleaded Mogas.
7	Max : 190 m Min : 60 m	68,000 MT	12.4 m (2006)	12.1 m	Diesel, Reformate, Jet A1, Unleaded Mogas, MTBE
VLCC Jetty 1	Max: 355 m Min: 195 m	387,000 MT	25.0 M	22.8 M	Crude

NB : Above maximum displacement of vessel at SRC Berths (excluding VLCC Jetty 1) shall be subjected to its design criteria stipulated below :

1. Approach lateral (breasting) velocity of vessel - not more than 0.26 knots (0.13m/second).
2. Designed wind velocity of our berths - 48 knots.

GENERAL INFORMATION

1. Due to shallower water beyond 160m from the berthing line of Berth 5, vessels at this berth with greater than 6.3m and over 115m in length are advised not to swing around south of the berthing line during berthing or unberthing.
2. For Berth 7, prefer vessels to berth portside alongside to facilitate the deployment of shore gangway. Other situations are subject to case to case basis.
3. For Berth 5, prefer LPG vessels to berth starboard alongside for better shore loading arm to ship's cargo manifold alignment. Other situations are subject to case to case basis.
4. Water Level to Centre of Cargo Manifold (WLCM) Max Height at Berth 6 is capped at 9.0m. This max height control is critical in order to ensure that shore Verhoef Gangway could be used for safe ship/shore access.

MSP-5.04.06 IMPORTANT NOTE

1. Maximum displacement of vessel at SRC Berth Nos. 1 to 3 and 5 to 7 shall be subjected to its design criteria stipulated below:
 - (a) Approach lateral (breasting) velocity of vessel - not more than 0.26 knots (0.13 m/sec).
 - (b) Designed wind velocity of our berths - 48 knots.
2. Minimum Length Over All (LOA) limitations at all berths assume ship's cargo manifold is at midship +/- 2metres. However, if cargo manifold and shore hard arm nominated for loading allows ship's parallel body to rest safely alongside the berth breasting fenders, the above limitation may be waived.
3. Maximum Draft Allowable = Depth Available (exclude height of tide at the time) minus Under Keel Clearance (UKC).
 - (a) Vessel over 3,000 GT requires an UKC of at least 1.0M when transiting.
 - (b) Vessel 3,000 GT or less requires an UKC of at least 0.6M when transiting.
 - (c) For all vessels, when alongside and in case of an emergency, an UKC of at least 0.3M is required.

When deciding Maximum Draft Allowable, controlling depth in approaches may be more critical than depth alongside especially for fully loaded vessel unberthing.

4. Berth 1 and 5 are the only berths for LPG import and export.
Berth 3 is the only berth for handling Flaked Sulphur and Bulk Asphalt.
5. All shore lines and flanges are designed to conform to BS 1560 or ANSI 16.5 and with a working pressure of 150 psig, with the exception of LPG system where the working pressure for LPG liquid line is 300 psig and vapour line in 150 psig.

6. To enable the safe connection and disconnection of loading arm, maximum height of ship's manifold above water level when using the following loading arms shall be as follows:
- (a) 17.5metres for loading arm : 1101-R to 1105-R at Berth 1
1108-R to 1113-R at Berth 2
 - (b) 5.0metres for LPG Hose : Vapour Return Hose at Berth 1
 - (c) 10.0metres for LPG loading arm : 1190-R at Berth 5
(Liquid with piggy **back** vapour & hydraulic operated)
 - (d) 8.5metres for loading arms : 1160-R to 1161-R at Berth 1
1163-R to 1164-R at Berth 2
1166-R to 1167-R at Berth 3
2201-R to 2204-R at Berth 5
 - (e) 9.0 metres for loading arms : 1181-R to 1185-R & 1191-R at Berth 6
(Hydraulic operated)
 - (f) 11.0 metres for asphalt loading arm : 1171-R at Berth 3
 - (g) 15.4 metres for loading arms : 2271-R to 2274-R at Berth 7
(Hydraulic operated)
7. Contents of a vessel's slop tanks may be discharged ashore through Berth No. 1, 2, 5, 6 and 7 after analysis and with prior approval of the Company. Ballast water containing chemicals or waste incompatible with shore facilities must not be discharged ashore.
8. Vessel shall present fixed manifold suited for hard arm connection. The introduction of flexible hoses or "floating" (movable) flanges into a vessel's fixed cargo pipeline system is not normally acceptable. Vessel's manifold arrangements shall comply with Oil Companies International Marine Forum (OCIMF) Standards for Tankers Manifolds and Associated Equipment.
9. Life vest must be worn when boarding/disembarking vessels using ship/shore access.

Note: No potable water supply to vessels at our jetties wef 1 Jan 2007

1. Application

These Regulations are to be observed on arrival at SRC defined herein.

2. Conditions Of Acceptance

Singapore Refining Company Private Limited accepts vessels for handling at its terminal on the understanding that operations are conducted safely and expeditiously and that berths are vacated as soon as practicable after operations are completed.

The Company reserves the right to suspend operations and require the removal of any vessel from the Terminal for:

- 2.1 Flagrant or continued disregard of statutory and Berth Regulations, and all Industry Safety Practices as per International Safety Guide for Oil Tankers and Terminals (ISGOTT).
- 2.2 Defects in vessel, equipment, manning or operations which in the reasonable opinion of the Company present a hazard to the Company's premises, personnel or operations.
- 2.3 Operational performance (appropriate to the type of vessel and operation) that fails to utilise satisfactorily the available Terminal facilities and thereby, in the reasonable opinion of the Company, constitutes an unacceptable constraint on the Company's operations.

3. Charges

Charges will be levied against a vessel for the costs of manpower, equipment or supplies used in the containing and removal of oil or other pollutants spilled by that vessel.

When a vessel which has been ordered to leave the Terminal in accordance with the Condition of Acceptance in MSP-5.05.01-E (Item 2) fails to vacate the Terminal within 3 hours (weather permitting and pilot available), a fee for berth occupancy of up to Sin\$1,000.00 per hour or part thereof may be levied by the Company at its discretion. The same fee may be levied in respect of a vessel permitted to stay at the Terminal for repairs and other operations.

The Company shall not be liable for any costs incurred by a vessel, its Owners, Charterers or Agents as a result of a refusal to load/discharge all or part of nominated shipment, delay to or suspension of loading/discharging, or a requirement to vacate the jetty arising from this Regulation, always provided that such cost shall be due to reasons arising from the vessel.

The Company reserves the right to monitor the loading of any vessel to ensure compliance with International Loadline Regulations and to notify the appropriate Authority in the event of contravention. Any charges incurred as a result of overloading and subsequent correction shall be for the vessel's account.

MSP-5.05.02 SHORE LEAVE AND SECURITY

For safety and security reasons, all ships on arrival at SRC shall submit two complete crew lists and ferry boat schedule to the Company. When granting leave, the Master shall observe the following:

1. Keep sufficient crew onboard to be able to shift the vessel at short notice or to deal with fire or emergency.
2. No one is permitted to enter the installation without being escorted by a Company representative. All personnel, including the agent, must wear proper protective equipment i.e. hardhat; long sleeves shirts and long pants of fire retardant material; safety shoes and safety spectacles whilst on shore. Life vest must be worn when boarding/disembarking vessels via the ship/shore access.
3. Under normal circumstances, ship's crew wishing to go ashore (mainland Singapore) shall do so from the seaward side through a pre-arranged crew ferry boat by the agent. This ferryboat carrying ship's crew wishing to proceed ashore or return to their ship shall strictly comply with the "Small Craft Alongside Vessel at SRC Berths" (MSP 5.05.07.3) which may be amended from time to time depending on the security level at the point of time.
4. Visitors to a vessel alongside SRC Berth which include shipowners, charterers and agents must be approved by the Company. In this respect, the Master / Agent shall provide a list of expected visitors at least 72 hours in advance before her arrival to the Company for approval. It is the responsibility of the Master who shall ensure their safety and that they comply with the Company Regulations while within the restricted area.
5. Authorised officials of the Company shall have the right to board any vessel at any time to ensure that these Regulations are being observed and have the right to stop operations in the event of contravention of the Regulations.
6. Loitering / fishing in the vicinity of the berths is prohibited.

MSP-5.05.03 RECEIPT AND DISPLAY OF REGULATIONS

Operation shall not begin until the Master has:

1. Signed for acknowledgement receipt of these Regulations.
2. Displayed notices in the appropriate languages bearing the words :
 - **WARNING**
 - **NO NAKED LIGHT**
 - **NO SMOKING**
 - **NO UNAUTHORISED PERSONS**

in prominent positions onboard, including near the access to the vessel :

3. With the loading Master, signed the Ship/Shore Safety Checklist (as per Form No. F/OMM005).

In addition, prior to the commencement of Crude Oil Washing (C.O.W.), Master shall sign the C.O.W. Checklist in Form No. F/OMM006.

1. Questionnaire

Prior to vessels arrival at SRC berths (preferably about 72 hours before her arrival), Master of vessel of 8,000 Dwt. and above, and all LPG vessels shall answer SRC Berth Questionnaire as outlined below:

- 1.1 Maximum Displacement - Berthing / Unberthing
- 1.2 ETA / LOA / SDWT / GT
- 1.3 Expected Deepest Berthing / Unberthing Draft
- 1.4 Distance from Bow to Cargo Manifold (BCM)
- 1.5 Maximum Height (**at all times**) from Water Level to Centre of Cargo Manifold:
 - (a) Including Ballast Water in SBT
 - (b) Including Ballast Water in SBT, CBT and COT
- 1.6 Distance of Cargo Manifold Inboard from Shipside
- 1.7 Vessel's Month and Year of Build
- 1.8 Does Vessel have a Fully Operational Inert Gas System and Meets all SOLAS / International Maritime Organisation (IMO) Requirements?
- 1.9 Is Vessel Equipped with COW and meets all Regulations for the Prevention of Pollution by Oil (MARPOL) / IMO Requirements?
- 1.10 Type / Quantity of Cargo Onboard
- 1.11 Type / Quantity of Cargo to be Loaded / Discharged
- 1.12 Confirm wires, if used for mooring the vessel, are provided with suitable fibre tail (about 85mm diameter) on the end of each mooring wire
- 1.13 Is the Drugs & Alcohol Policy enforced onboard and meets OCIMF Guidelines for the Control of Drugs & Alcohol Policy Onboard?
- 1.14 Does Vessel's Manning and Certification Levels meet all relevant STCW 78 Minimum Requirements for Training & Qualifications for Masters, Officers and Ratings and its amendment as adopted by MPA / IMO from time to time OR in the case of port limit vessels, does Manning and Certification Levels meet MPA Harbour Craft Manning requirements?
- 1.15 Is vessel equipped with VHF radio set and can she operate on Channel 5 (Hague Plan) Frequency 156.25 MHz Rx; 160.85 MHz Tx.
- 1.16 Are vessel's cargo tanks fitted with full depth sounding pipes? If not, are all her cargo tanks fully inerted, with oxygen content 8% by volume or less?
- 1.17 Is past record (last 10 calls) of security levels at other port facilities available? If security level at any time is other than 1, please provide details.

- 1.18 What is the maximum H2S content measured in the vessel's cargo tank vapour space? If greater than 50 ppm, please supply details.
- 1.19 If vessel has been involved in any serious pollution or fire incidents in the last 12 months, please provide full description and incident report.

2. Additional Questionnaire for Gas Carrier

The below "Additional Questionnaire" shall be answered by all gas carrier prior calling at SRC terminal for the first time. If there is no change to the vessel's design, it need not be answered on each occasion. The purpose of the additional questionnaire is to confirm that she is a fully pressurized gas carrier and not semi or fully refrigerated gas carrier.

- 2.1 Is the vessel a fully pressurized gas carrier?
- 2.2 What is the maximum cargo tank design pressure in kgs/cm²?
- 2.3 What are the cargo tank safety relief valves pressure settings whilst at SRC terminal?
- 2.4 What are the maximum and minimum cargo tank design temperatures in degree Celsius?
- 2.5 How many cargo pump is available, and its type and capacity in m³/hr at what NPSH?
- 2.6 How many cargo compressors are available, and it capacity and delivery pressure in m³/hr and kgs/cm² respectively?
- 2.7 Confirm that vapour in all cargo tanks is typical LPG vapour mixture only and no oxygen, nitrogen, air and other non-condensable gases.

3. Damaged Vessels

The Master of an arriving vessel:

- 3.1 Which has sustained damage outside the Port of Singapore which affects or is likely to affect her seaworthiness, or
- 3.2 From which oil or any dangerous or flammable substance is escaping or is likely to escape, shall give notice thereof to the Port Master and Company and the vessel shall not enter the Port of Singapore except with the permission of the Port Master and in accordance with his directions.

The Master of a vessel which sustains damage within the Singapore Port Limit shall immediately notify the Port Master of such damage and shall thereafter act as directed by the Port Master.

MSP-5.05.05 MOORING/GANGWAY AND ACCESS

1. MOORING

No unauthorised person is allowed onto the jetty head during the mooring and unmooring of a vessel. No vessel shall moor at the Terminal without the permission of the Loading Master.

Masters of vessels shall:

- 1.1 Ensure that their vessels are adequately secured alongside with sufficient ropes or wires which are also to the satisfaction of the Loading Master (see Appendix B). Note that if wires are used for mooring the vessel, they must be provided with a suitable fibre tail on the end of each mooring wire. Also, the aforesaid mooring patterns are the minimum requirements. It is the vessel master's responsibility to ensure that where the situation warrants, the number of mooring lines used should be increased to suit the prevailing situation.
- 1.2 Ensure the mooring ropes of dissimilar materials, ie. mixed mooring of wire and synthetic ropes of different elasticity, shall never be used in the same direction.
- 1.3 Ensure that a strict watch is kept on their vessels' moorings and that they are tended as required to prevent undue movement of the vessel.
- 1.4 Ensure that their vessels' mooring wires or synthetic ropes are fastened only to the proper fixtures provided for this purpose.
- 1.5 Provide, rig and secure towing wires of adequate size on vessels' offshore bow and quarter with towing eyes maintained at not more than 2 metres above the waterline during all draft conditions (see Appendix A).
- 1.6 Ensure that self tensioning winches are not used in automatic mode and shall ensure that winch brakes are kept hardened up except when moorings are being adjusted.

2. GANGWAYS AND ACCESS

- 2.1 Access between jetty and vessel will normally be provided by the terminal. However, in accordance with Singapore Port Regulations, Master of a vessel at anchor or secured to a berth shall provide efficient and easy means of access which is adequately illuminated from sunset to sunrise or during the periods when visibility is poor or restricted. In addition, as per ISGOTT, the responsibility for the provision of a safe ship/shore access is jointly shared between the vessel and terminal.

All such means of access to and from the vessel shall be provided with side rails, safety nets (ships to provide) and such appliances as may be necessary for the convenience and safety of personnel using it. So far as practicable, ships to automatically provide bulwark ladder, its equivalent steps or landing platform and/or safety net to enhance the safe transfer from shore access to ship's deck.

- 2.2 Masters who choose to use the Company's gangway are reminded that the Company shall be free of any liability and responsibility due to any negligence or whatsoever.
- 2.3 Masters shall ensure that safe working areas are available in all parts of the vessels to which Company personnel might reasonably require access.

In general, operations shall be conducted in accordance with the requirements of the current edition of the International Safety Guide for Oil Tankers and Terminals and the International Chamber of Shipping (ICS) Tanker Safety Guides, as appropriate. In particular:

1. Sufficient personnel, under the continuous supervision of a responsible officer shall remain onboard at all times to deal with routine operations and any emergencies. In addition, while alongside SRC berths all vessels are to be manned by at least one Senior Deck Officer (Master / Chief Officer) and one Senior Engineer (Chief / Second Engineer).
2. An English speaking Responsible Ship's Officer must be on watch at all times.
3. A responsible member of the ship's crew, capable of understanding the Loading Master's directions and relaying them to his Responsible Ship's Officer, shall be stationed at or near the ship's manifold at all times.
4. All doors, portholes and openings leading from the main deck to accommodation or machinery spaces (other than the pumproom) shall be kept closed. Likewise, any doors, portholes and openings at any deck level above the main deck which overlook the main deck shall be kept closed. Cargo Control Room doors opening onto or above the main deck may be opened momentarily for access.
5. All ventilators through which gas can enter shall be suitably trimmed and mechanical ventilation and air conditioning units shall be stopped if gas is being drawn into the accommodation; window-type air conditioning units shall be electrically disconnected unless situated wholly within the accommodation.
6. All cargo tank lids shall be kept closed and secured, except when specific permission is granted by the Loading Master. Such permission will normally be granted only in respect of tank preparation and inspection. All cargo and bunker manifold connections shall be fully bolted and when not in use, blanked.
7. Unless the ship's design dictates otherwise, the venting of cargo tanks must take place only through the vessel's fixed venting system. This includes when using inert gas.
8. Sighting and ullage ports must be kept closed when not in use. Approved flame screens shall be fitted to in-use sighting and ullage ports.
9. If for any reason there is an unusual evolution and accumulations of gas, loading shall be stopped or the loading rate into a particular tank or tanks reduced at the discretion of either the Loading Master or the responsible ship's officer.
10. All vessels must by day fly Flag 'B' or the International Code of Signals and by night exhibit an all-round red light.
11. The cargo pumproom mechanical ventilation system shall be kept in operation and the atmosphere within the pumproom maintained in a condition such as to permit safe entry. On demand from the Loading Master, the responsible officer shall provide evidence of safe entry conditions.
12. The responsible ship's officer shall give 15 minutes verbal notice to the Loading Master before the completion of any operation, or any change in operational conditions.
13. A vessel alongside must be maintained in a state of readiness for vacating the jetty at short notice, except in cases of approved repair work as detailed in Regulation 5.06.02(9).

14. Sea/Overboard valves connected to the cargo system will be closed and visibly secured on arrival. Except in an emergency, securing may be removed only with the approval of the Loading Master and in his presence.
15. Emergency Shut Down (ESD) System is located at the Jetty Head and Oil Movements Control Room. In the event of any emergency, jetty operator should be immediately alerted to the situation with the announcement - “**STOP LOADING - EMERGENCY**”. On this announcement, the jetty operator will immediately activate the ESD System. Ship’s manifold valves should not be closed until advised to do so by jetty operator.
16. Ballast water discharge from segregated ballast tanks (SBT) must be visually checked prior and during discharge for the presence of any oil. This is to restrict operational discharge of oil into the sea during the deballasting operations.

NOTE : THE SHIP MUST NOT SHUTDOWN AGAINST THE SHORE AT ANY TIME.

MSP-5.05.07 GENERAL SERVICES - SMALL CRAFT/STORES/BUNKERING

1. General Cargo and Stores Handling

The handling of any form of packed or general cargo will not be permitted unless of an emergency nature and this will only be permitted with the specific approval of the Loading Master and under such conditions as he may reasonably require.

Examples of such conditions are as follows:

- 1.1 The stores crane/derrick at the aft end of the vessel should always be used.
- 1.2 In the absence of stores crane/derrick aft, all cargo operations should be ceased and all cargo tank lids and openings closed and battened down until storing is completed.
- 1.3 Small items of stores, capable of being hand carried safely via the ship’s gangway during operations, may be permitted, provided that any metal package is suitably wrapped to prevent any risk of metal to metal contact.

2. Bunkering from Lighters/Barges While Alongside SRC Berths

Bunkering from lighters/barges while alongside SRC berths **is not permitted** except in special circumstances. If it is permitted, the receiving tanker **must** stop all cargo or ballasting operations and battened down during the entire bunker transfer. Bunkering to LPG vessel by lighters/barges alongside is not permitted.

3. Small Crafts alongside Vessel at SRC Berths

Small crafts wishing to proceed to a vessel alongside a SRC berth shall observe the following:

- 3.1 All small crafts used by shipping agents wishing to service a vessel at SRC berths must be provided by Tian San Shipping (TSS) only. This is to ensure that strict safety/security controls are in place. The crafts supplied by TSS will fly an SRC flag at all times and are painted “luminous orange strip” at the top of the white accommodation block of the boat for easy identification. The same crafts are also equipped with VHF for direct pre-clearance reporting to SRC Oil Movements Office prior to departure from the embarkation piers and again for final clearance when craft is 15 minutes before reaching the relevant SRC berth.

Contact number of TSS 24-hr Operational Office is 96393292. Back up is 96275524. SRC Oil Movements Office could also be contacted through Ph: 63570143/145 or Fax: 68677148.

Only small crafts conveying shipping agent with **urgent** ship's business such as arrival and departure clearance are permitted to service a vessel at SRC Terminal. This shall not include crafts operated by MPA/PSA Marine etc... for official work such as berthing/un-berthing operations.

All crafts must strictly comply with all relevant MPA rules and regulations, in particular, the security requirements to submit the standard "Application form for going to vessel at Restricted/Prohibited Areas". Preferably 24-hr advance notice shall be given to SRC in the said MPA form prior to craft arrival.

Non-intrinsically safe equipment ie. pagers and handphones etc... must be switched "OFF" and are prohibited to be brought into SRC and on board the vessel whilst at our terminal. Photography is strictly not permitted when vessel is approaching SRC berths and during her entire stay alongside.

Final clearance shall only be given when conditions on the vessel are safe and terminal safety rules and regulations are strictly adhered to. Once this is given, the small craft shall go alongside the vessel through the seaward side only, and shall strictly observe the requirements listed below.

- 3.2 No small craft will go alongside any berth or berth area for the purpose of landing personnel or equipment onto the berth.
- 3.3 No small craft providing service to a vessel will wait alongside a berth or berth area.
- 3.4 Any small craft providing service to a vessel on any SRC berths shall strictly observe the relevant no naked light requirements as well as other terminal safety requirements and will attend to that vessel on the seaward side only. Once personnel have been transferred on board, such craft will proceed to clear area at least 50 metres away from the vessel and wait in that area until requested by the vessel to approach in order to disembark persons.
- 3.5 Master of vessel will remain responsible to SRC for ensuring that any small crafts attending to the vessel from the seaward side will be controlled in accordance with the Industry Safety Practices.
- 3.6 **Under no circumstances are any small crafts allowed alongside LPG vessels** at SRC berths. Agents wishing to provide a service to a LPG vessel, after clearing security, shall access via "**Mooring Point East**", and be escorted by the berth technician and proceed directly to or from their vessel. Loitering in the vicinity of our shore installation is prohibited. All personnel, including the agent, must wear proper protective equipment ie. safety helmet with chinstrap; long sleeves shirt and long pants of fire retardant material; safety shoes and safety spectacles whilst on shore. Life vest must be worn when boarding/disembarking vessels via the ship/shore access.
- 3.7 In principle, no small craft should be permitted to go alongside a tanker (excluding LPG vessel which must strictly comply to paragraph 3.6 above) with **low freeboard of less than 6m whilst she is handling volatile petroleum cargo or when tanks are not gas freed with the last cargo carried being**

volatile or unfavourable environmental/weather conditions. However, it is important that the Loading Master should assess each situation accordingly (in consultation with the Master or his deputy) and exercise his discretion whether small craft should be permitted to go alongside a tanker or not.

MSP-5.05.08 TANK WASHING & GAS-FREEING / INERT GAS OPERATION / ENTRY INTO VESSEL'S TANKS

1. Tank Washing and Gas Freeing

Tank washing (including COW) and gas freeing (including inert gas purging) of cargo tanks are not permitted without the approval of the Loading Master. Permission will only be granted subject to Terminal availability and provided that all safety and operational requirements, as determined by the Loading Master, are met in full. Such safety and operational requirements will be in accordance with the provisions of the ISGOTT, and the ICS Chemical Tanker Safety Guide, as appropriate.

Prior to commencement of COW, Master shall sign the COW Checklist in Form No. F/OMM006.

2. Inert Gas Operations

- 2.1 When carrying volatile petroleum, every existing tanker of 40,000 Dwt. and upwards and every existing tanker between 20,000 and 40,000 Dwt. fitted with high pressure tank washing machines (capacity greater than 60m³/hour) must be fitted with an Inert Gas System. This system must be operated effectively to maintain the atmosphere in the cargo tanks non-flammable at all times when volatile petroleum (see definition) is carried or when the cargo tanks are not gas freed.
- 2.2 The I.G. System must be capable of delivering inert gas with oxygen content of not more than 5% by volume in the inert gas supply main. The atmosphere in the cargo tanks must at all times be maintained at a positive pressure and the oxygen content not exceeding 8% by volume.
- 2.3 In the event of failure of the I.G. System in port, it is the responsibility of the Master to immediately suspend cargo and deballasting operations and notify the Port Master and Loading Master.
- 2.4 In the event of I.G. plant failure, prior to or during cargo or ballast discharge, discharge should not commence or continue until I.G. plant operation is restored, or an alternative source of I.G. is provided.
- 2.5 Item 17 of the SRC Ship / Shore Safety Checklist applies to this regulation (refer Form No. F/OMM005).

3. Entry Into Vessel's Tanks

Entry into a vessel's tanks or any enclosed space is not permitted while the vessel is alongside the terminal unless the Loading Master has established that, in principle, the proper safety procedures will be adopted by the vessel and in accordance with the provisions of ISGOTT and ICS Tanker Safety Guide as appropriate. It must be understood that the Master will remain fully responsible for ensuring that all operations are carried out safely.

MSP-5.06.01-E HEALTH HAZARDS / POLLUTION

1. Health Hazards

Masters are particularly cautioned that certain of the products handled at this Terminal are subject to particular precautions. Masters are responsible for ensuring that the hazards of such products are known by their crew and that all applicable precautions are taken in their handling.

2. Avoidance Of Oil Pollution

No oil or ballast water, other than clean ballast contained in segregated ballast tank and cargo tanks, shall be discharged or allowed to escape from a vessel into the harbour water unless they comply with MARPOL 73 / 78 requirements, that the oil content of the effluent does not exceed 15 ppm and that no visible traces of oil is sighted on the surface of the water.

During operations, all scuppers of vessels shall be effectively plugged and no leakage or spillage on board shall be swept or allowed to leak overboard.

Any leakage or spillage must be reported immediately to the Loading Master and operations suspended until the leakage or spillage has been cleaned up to the satisfaction of the Loading Master and Port Master. The Loading Master may mobilise resources to assist in the containment and cleaning of pollution caused by a ship, without the authority of the Master but in such action, he shall be considered to be acting on behalf of the Master and with his approval.

If for any reason (including as a result of air surveillance or inspection of a vessel on arrival), an authorised Government Representative advises the Company that he may be instituting legal proceedings against the Master or Owner on the grounds of pollution, the Company shall have the right to suspend / delay cargo operations and, after consultation with the said Representative, may require the vessel to vacate the berth.

On receipt of written confirmation of intent to prosecute, the Company shall have the right to refuse to load / discharge the vessel.

3. Discarding Material Overboard

No garbage, oily sludge or scales or other hazardous material shall be thrown overboard, nor shall any other objectionable material, either solid or fluid, be thrown overboard.

MSP-5.06.02 FIRE PRECAUTIONS

1. Fire Precautions

Vessel's fire fighting appliances, including main and emergency fire pumps shall be ready for immediate use and pressure shall be maintained on the fire main while alongside. At least two fire hoses, fitted with jet/fog nozzles shall be uncoiled and connected to the fire main on the main deck.

An International Ship Shore Connection shall be available on the ship's fire main in the vicinity of the gangway, and at least two portable fire extinguishers, preferably of the dry chemical type, shall be appropriately placed in the vicinity of the cargo manifold.

The Master is responsible for ensuring that the shore Fire Notice and Instructions are understood on board (refer MSP 5.03).

2. Smoking

2.1 Once the ship is alongside SRC, smoking onboard is only permitted in those enclosed spaces aboard ship specifically designated by the Master in consultation with the Loading Master as 'Smoking Areas'. Smoking rooms nominated by the Master shall be situated abaft the cargo tanks and shall have no doors or ports opening directly onto or above the main deck. The Loading Master may when circumstances warrant, prohibit smoking altogether. Notices (Appendix D), specifying the approved smoking rooms shall be conspicuously exhibited on board while the vessel is alongside.

2.2 Smoking is **not permitted** on all the berths and its adjacent areas.

3. Matches and Lighters

The carrying and use of matches and lighters is prohibited except as authorised by the Loading Master for a specific purpose. Where the carrying and use of matches is permitted, such matches must be of the approved safety type.

4. Prevention of Sparking and Excessive Funnel Smoking

Opening and closing hatches, connecting and disconnecting loading arms or hoses and any other operation on deck involving the use of metal instruments shall be carried out in a manner that avoids the generation of sparks.

Soot blowing and excessive funnel smoking is prohibited and immediate steps must be taken to eliminate sparking from funnels. Excessive funnel smoking **for environmental pollution** means emission of smoke for more than 5 minutes in any one hour and such incident shall not exceed three times in any one day.

5. Weather Precautions

Operations shall be stopped during severe electrical storms (lightning), periods of high winds or still air conditions at the discretion of either the responsible ship's officer or the Loading Master and all tank openings, cargo valves and valves in the gas line shall be closed.

In the case of electrical storms (lightning), reference shall be made to the latest ISGOTT, in particular, cargo operations must be stopped when handling of volatile petroleum or handling of non-volatile petroleum in tanks not gas free of VOLATILE hydrocarbon vapour, regardless of whether or not the ship's cargo tanks are inerted (Refer MSP-5.04.02 for definition of VOLATILE).

During periods where the wind speed is in excess of 30 knots, stop cargo operations. Drain and disconnect loading arm. Throughout this period secured mooring arrangements shall be maintained at all times. If the need arises the Loading Master may call for a pilot and tugs assistance to keep the vessel safely alongside. The cost for pilot/tugs assistance shall be for the account of the vessel.

6. Use of Naked Lights

The use of naked lights is prohibited except:

- 6.1 in the places (if any) where smoking is permitted [refer MSP 5.06.02(2)];
- 6.2 as provided under MSP 5.06.02 (9), (10) and (11).

7. Ship's Radar and Radio Transmitters

Ship's radar and radio station transmission equipment including secondary / emergency transmitters, satellite communications equipment, etc, except permanently and correctly installed VHF equipment, shall not be used while alongside and aerials shall be earthed.

8. Portable R/T Sets, Lamps and Domestic Appliances

Portable R/T sets, lamps, electric or otherwise shall not be used unless of an approved type. The use of portable electric lamps and equipment on wandering electric cables is prohibited in any cargo or adjacent ballast space, pumproom, cofferdam, bunker compartment, hold or anywhere over the cargo tanks.

9. Repair / Maintenance Work

Repair/maintenance work involving either hot or cold work or the use of naked lights is prohibited unless the permission of the Loading Master has been requested and granted in writing. Repair/maintenance work will include boiler work, chipping and scrapping, testing, servicing or retrofitting of electrical equipment (including radar, radio and domestic electrical equipment) etc.

If permission is granted, a list of specified repairs and a list of shore workmen employed on a vessel must be given to the Loading Master before work commences (Form No. F/OMM009 to be completed). Where approved repair work involves the immobilisation of the vessel, the Loading Master shall be notified of the commencement and completion of the work.

10. Boiler Fires

So as not to immobilise the vessel, boiler fires shall only be extinguished when the Loading Master in consultation with the Master, decides that the maintaining of boiler fires constitutes an undue hazard.

11. Galley Stoves and Other Cooking Equipment

The use of galley stoves and other cooking equipment shall be permitted, provided the Master and Loading Master agree that no hazard exists. LPG stoves are not allowed.

MSP-5.07.01 DEFINITION/PRODUCT HANDLED/TYPE OF VESSEL/BERTH FACILITIES

1. Definition

LPG : Any substance derived from petroleum which is gaseous at ambient temperature and pressure but which may be kept liquefied by the use of increased pressure or refrigeration.

2. Product Handled

The products handled are mainly, Propane and Butane which are loaded separately or as a mixture, commonly known as LPG.

3. Type of Vessel

Only fully pressurised LPG vessel which meets all SOLAS 74/78 requirements (especially the IGC Code) and its amendment as adopted by IMO from time to time will be accepted.

4. Berth Facilities

4.1 LPG

LPG is loaded via 6" pipeline and 6" loading arms at Berths No. 1 and 5. A 4" flexible hose at Berths No. 1 and 5 are connected to 4" vapour return pipeline to shore sphere is provided for Close Loading Operations.

4.2 Ship / Shore Connection

Both the loading arm and flexible hose for vapour return are manually connected to the ship's manifold by the terminal personnel and the ship's crew.

4.3 Emergency Shut Down (ESD) System

A remote stop button is located at the jetty as well as in the Oil Movements Control Room to stop the loading pump and the jetty head valves in an emergency.

4.4 General Cargo & Stores Handling

The handling of any form of packed and general cargo and stores will not be permitted at all times.

MSP-5.07.02 EMERGENCY PROCEDURES / MINIMUM REQUIREMENTS FOR MASTER AND RATINGS

1. Emergency Procedures

1.1 In order to be in a position to deal with emergencies, the vessel must:

- (a) Ensure that sufficient, able and responsible crew members remain on board at all times for manning emergency services.
- (b) Have adequate emergency equipment, in full working order ready for use.
- (c) Provide emergency towing wires fore and aft on the outboard side of the vessel whilst alongside the jetty (see Appendix A).

1.2 The Ship / Shore Safety Checklist (Form No. F/OMM005) and LPG Checklist (Form No. OMM007) elaborate on the basic requirements stated.

- 1.3 In the event of an emergency during loading, shore Emergency Shut Down (ESD) system located onboard the ship may be used. In addition, the jetty operator should be immediately alerted to the situation with the announcement - **“STOP LOADING - EMERGENCY”**. On this announcement, the jetty operator will immediately activate the shore ESD system if this is not yet activated. Ship’s manifold valves should not be closed until advised to do so by jetty operator. Vessel must immediately cease all other operations and await further instructions, ensuring that jetty operator is made aware of all actions taken.

NOTE: THE SHIP MUST NOT SHUT DOWN AGAINST THE SHORE AT ANY TIME.

- 1.4 In the event of any emergency during discharging, ship ESD system must be used first by immediately alerting the ship’s duty officer with the announcement - **“STOP DISCHARGING - EMERGENCY”**.

2. Minimum Requirements for Master and Ratings

Masters, Officers and Ratings must possess valid certificates/licenses appropriate to their rank and/or position on the vessel and the region of operation. This will include Dangerous Cargo Endorsement (DCE) as required under the STCW 78 requirements for the appropriate type of vessels.

Vessel whose crew are unable to obtain the required DCE will be considered on a case by case basis. This will include interviewing the crew to review their competence, years of experience on similar type of ship, tanker safety course attended, equipment and procedures.

MSP-5.07.03 PRE-OPERATIONS MEETING AND INSPECTION

1. Before the loading operation begins, the pre-operation ship/shore procedures must be thoroughly discussed and subsequently carried out.

The ship’s cargo tanks shall have carried a similar propane/butane mixture for its last cargo otherwise a third party Independent Surveyor (Chemist) shall provide a Report/Certificate giving details of the condition (analysis of vapour/liquid, temperature, pressure) of the cargo tank(s) to SRC prior to her arrival.

The ship’s cargo tanks shall be in a ready state to allow the immediate safe loading of the stipulated cargo with the pressure **of less than 5kg/cm²**.

Nitrogen or Inert Gas from ship’s tanks shall never be allowed to return to our shore LPG sphere/bullet. No facilities are available for LPG ships to purge alongside this terminal and purging whilst alongside is also prohibited.

2. The Loading Master will together with the Master complete the Ship / Shore Safety Checklist and the additional Safety Checklist for LPG vessels, and any deficiencies will be discussed and additional precautions required agreed.
3. A vessel with tanks under vacuum is not acceptable; tanks must be under pressure to allow vapour samples to be drawn and checks for liquid on board to be carried out.
4. Shore vapour return line may contain some liquid LPG. Master must therefore keep a close check on ship’s compressor inlet knockout pot when it is operated.
5. Following the discharge of LPG, when no more liquid LPG remains in the ship’s tank, the ship’s compressor will deplete the vapour in the ship’s tank down to about 1.0 kg/cm².

During this operation the discharge pressure of the ship's compressor must not exceed 19 kg/cm² and the vapour will be depleted through shore liquid line.

MSP-5.07.04 OPERATIONAL PROCEDURES

1. Before Loading

- 1.1 The LPG loading arm and vapour return line will be connected by the terminal personnel and ship's crew.
- 1.2 When connected, a line pressure test using saturated vapour pressure of the LPG (approximately 6 kg/cm²) will be applied to the loading arm/vapour return line and connections with ship's manifold valves closed to check for leaks.
- 1.3 Ship and shore system will then be set for loading to commence and Loading Master and Master will agree to commence operation.

2. During Loading

- 2.1 Ship's pressures will be checked and recorded every 30 minutes by the Master.
- 2.2 The Loading Master or his representative will remain on the jetty at all times.
- 2.3 The Master will inform the Loading Master or his representative of any deviation from the agreed loading plan.
- 2.4 The ship must not shut against the shore pumps at any time during loading. **In an emergency**, the berth's shutdown system should be used first, if possible, in order to protect the loading arm and pipeline from unnecessary stresses/surges in pressure. The ship's emergency shutdown system **shall not** be activated first to stop flow except in **extreme** emergencies.
- 2.5 Ship's vapour return valve at the manifold shall preferably be kept open at all times. Should the ship requires the valve to be shut, the Loading Master or his representative must be informed and agreed upon (refer to LPG Loading System in Appendix C).
- 2.6 The Loading Master or his representative must be informed if the vessel requires to stop operation.
- 2.7 Ship must give **15 minutes** notice to the Loading Master or his representative prior the completion of the cargo operations.

3. On Completion of the Loading Operation

- 3.1 Close valve systems at shore's loading arm and ship's manifolds.
- 3.2 Clear the loading arm and vapour return hose of product via ship's venting system.
- 3.3 The loading arm will be disconnected by terminal personnel.
- 3.4 The ship's manifold will be blanked by ship's crew.
- 3.5 The Loading Master or his representative will witness ship's gauges and obtain from the Master, the quantity loaded according to ship's figures.
- 3.6 The cargo quantity loaded will be calculated from shore's mass meter and entered on the cargo documents.
- 3.7 Shore figures shall be used for billing. Gauges and calculations must be re-checked if a large discrepancy occurs. (Refer to OMA's SI-BERTH-4.0.18).

1. Policy

Guidelines to registered Master of named vessel between 300GT to below 6000GT being granted no objection for pilotage exemption to SRC Berths.

2. Application

In addition to all other statutory requirements, the following provisions shall be complied with:

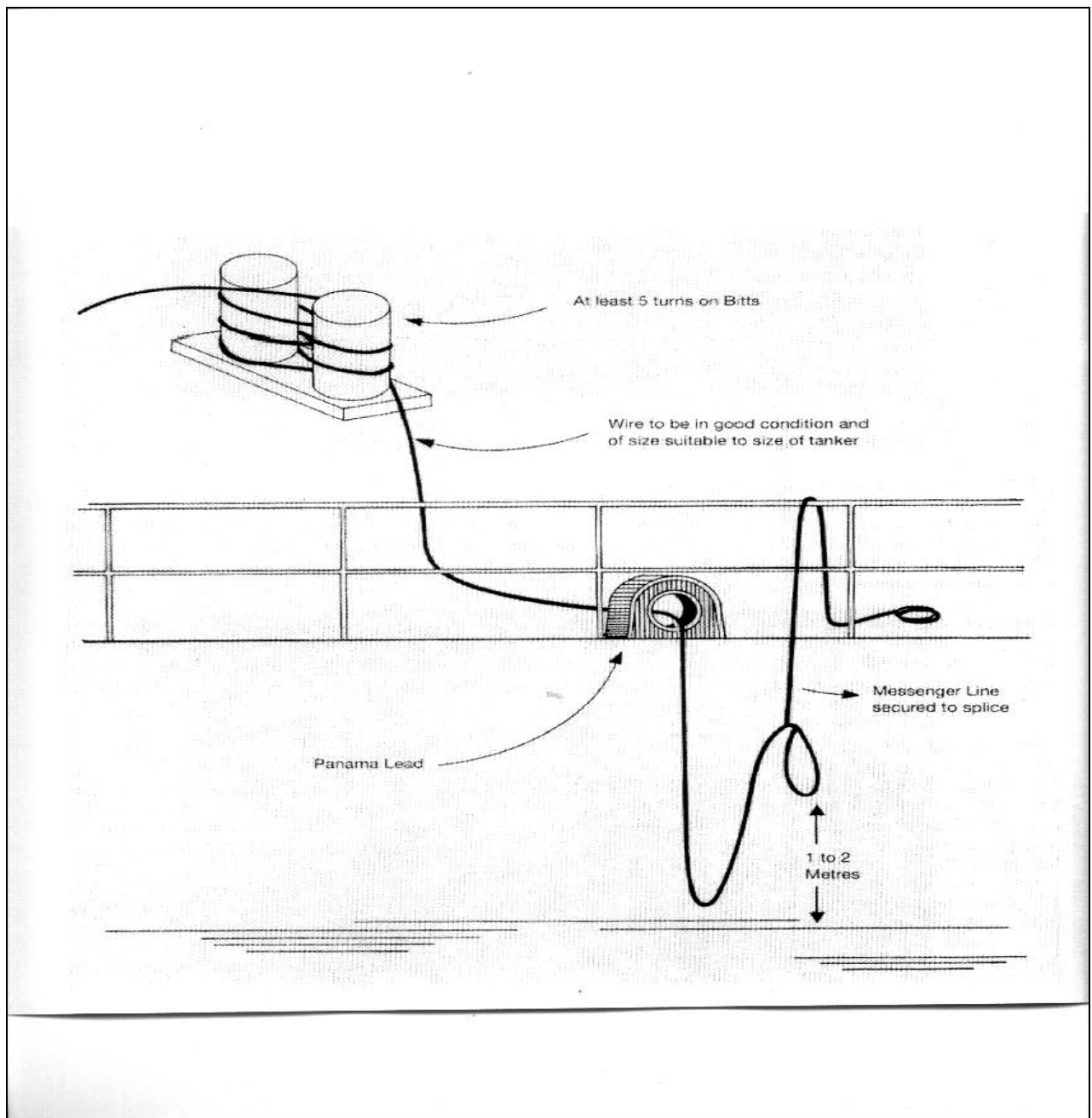
- 2.1 Master of Licensed Harbour Craft / Sea Going Vessel with existing pilotage exemption shall have brought the vessel in to the relevant SRC berth on at least three occasions within the last six months in order to maintain the validity of her existing pilotage exemption.
- 2.2 Master of Licensed Harbour Craft / Sea Going Vessel applying for pilotage exemption for the first time to berth at SRC berth must have at least one year experience in command of the named vessel/craft and brought the vessel/craft in to the relevant SRC berth on at least three occasions (three berthings and three unberthings) within the last six months with the assistance of PSA pilot and tug. **Vessel greater than 2000GT to below 6000GT must be equipped with bowthruster and twin screws engines or its equivalent propulsion and must be operational at all times.**

For the purpose of the above application, the relevant berth at SRC shall be grouped as follows:

Group 1	-	Berth 1 or 2
Group 2	-	Berth 3, 6 or 7
Group 3	-	Berth 5

In addition, the Master of vessel requiring pilotage exemption to move within SRC location shall have an interview with SRC Marine Superintendent for familiarisation/safety discussion prior to the granting of said pilotage exemption. **For vessel greater than 3000GT to below 6000GT and with length overall (LOA) of up to 122m, Master must also go through a formal pilotage exemption assessment using the Singapore Maritime Academy (SMA) Ship Handling Simulator recognised by SRC and rated to be above average.**

- 2.3 The vessel to which the above pilotage exemption may be granted shall be fitted with a VHF set with Channel 5 (Hague Plan Frequency 156.25mHz/160.85mHz) or equivalent which must be capable to maintain a continuous listening watch between named vessel and SRC Loading Master when the vessel/craft arrive within a range of 1 Nautical Mile from her intended berth.
- 2.4 Under normal circumstances, a Master who has been revoked from pilotage exemption at SRC berths must re-apply and fulfil all requirements as if he (the Master) is applying for pilotage exemption for the first time.
- 2.5 Failure to comply with any of the requirement or of the neglect of any precaution which may be required by ordinary practice of seamanship shall render this pilotage exemption invalid and Master/Owner shall be liable. **SRC shall not be held responsible for any incident which may arise due to the granting of the above no objection for pilotage exemption and the Company reserves the right to make any pilot exempted vessel/craft using her facilities to be under pilotage.**



Note: The emergency towing wires must be rigged in the above manner for forward and after part of the ship.

**Singapore Refining Company Private Limited**

Company Registration No: I97900084K

1 Merlimau Road

Singapore 628260

Tel : (65) 6357 0100 Direct Line : 63570143

Fax : (65) 6867 7182 Direct Fax : 68677148

MINIMUM MOORING PATTERN FOR ALL VESSELS AT SRC BERTHS

1. For Vessel of LESS THAN 3000 GT
2 Head/Stern Lines; 2 Forward/Aft Spring Lines - i.e. (2+2)
2. For Vessel of BETWEEN 3000 TO LESS THAN 5000 GT
3 Head/Stern Lines; 2 Forward/Aft Spring Lines - i.e. (3+2)
3. For Vessel of BETWEEN 5000 TO LESS THAN 40,000 GT
3 Head/Stern Lines; 2 Forward/Aft Breasts Lines; 2 Forward/Aft Spring Lines - i.e. (3+2+2)
4. For Vessel of 40,000 GT and ABOVE
4 Head/Stern Lines; 2 Forward/Aft Breasts Lines; 2 Forward/Aft Spring Lines - i.e. (4+2+2)

Notes : A general guidelines, the desirable horizontal and vertical angles of mooring lines are as follows :

Horizontal Angles

Breast Lines - 15° or less between the location of ship's chock and shore mooring point.

Head/Stern Lines - 45° or less between the location of the ship's chock and shore mooring point.

Spring Lines - 10° or less between the location of the ship's chock (parallel body) and shore mooring point.

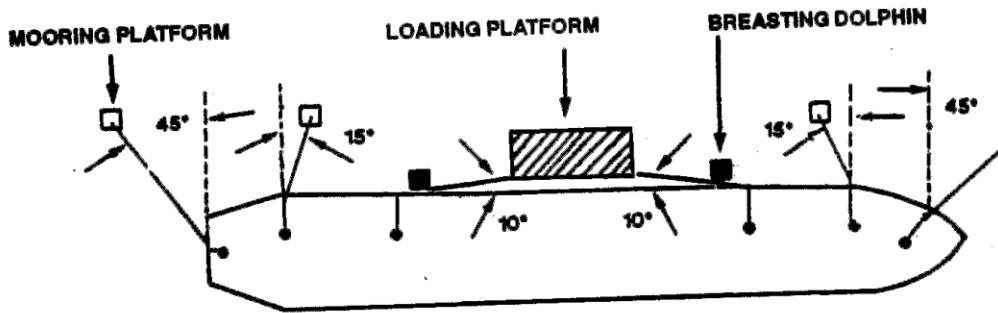
Vertical Angles

The vertical angles of all mooring lines should not exceed 30°, although 25° is preferable, throughout.

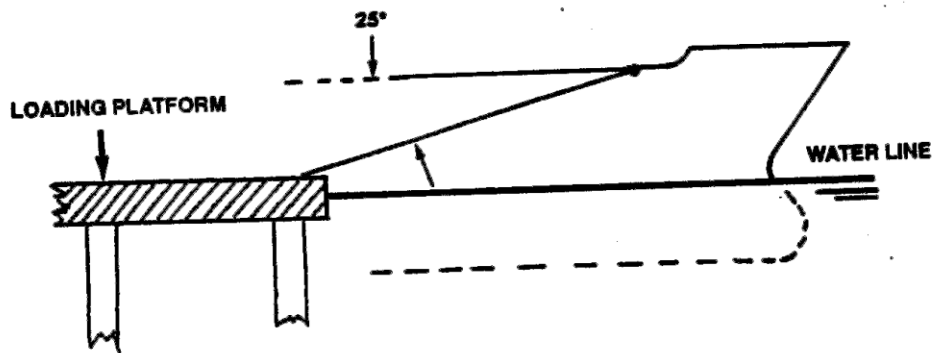
Issue No : 02
Date : 1/7/99
Ref : MSP 5.05.05

MINIMUM MOORING PATTERN FOR ALL VESSELS AT SRC BERTHS

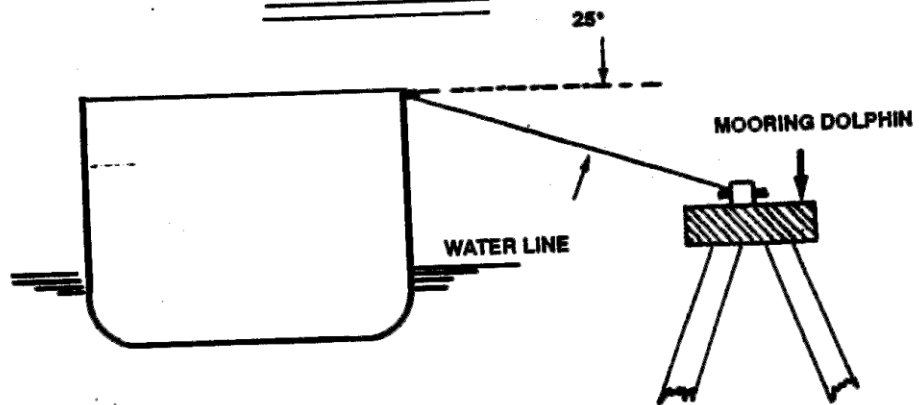
IDEAL HORIZONTAL ANGLES OF MOORING LINES



IDEAL VERTICAL ANGLES OF MOORING LINES



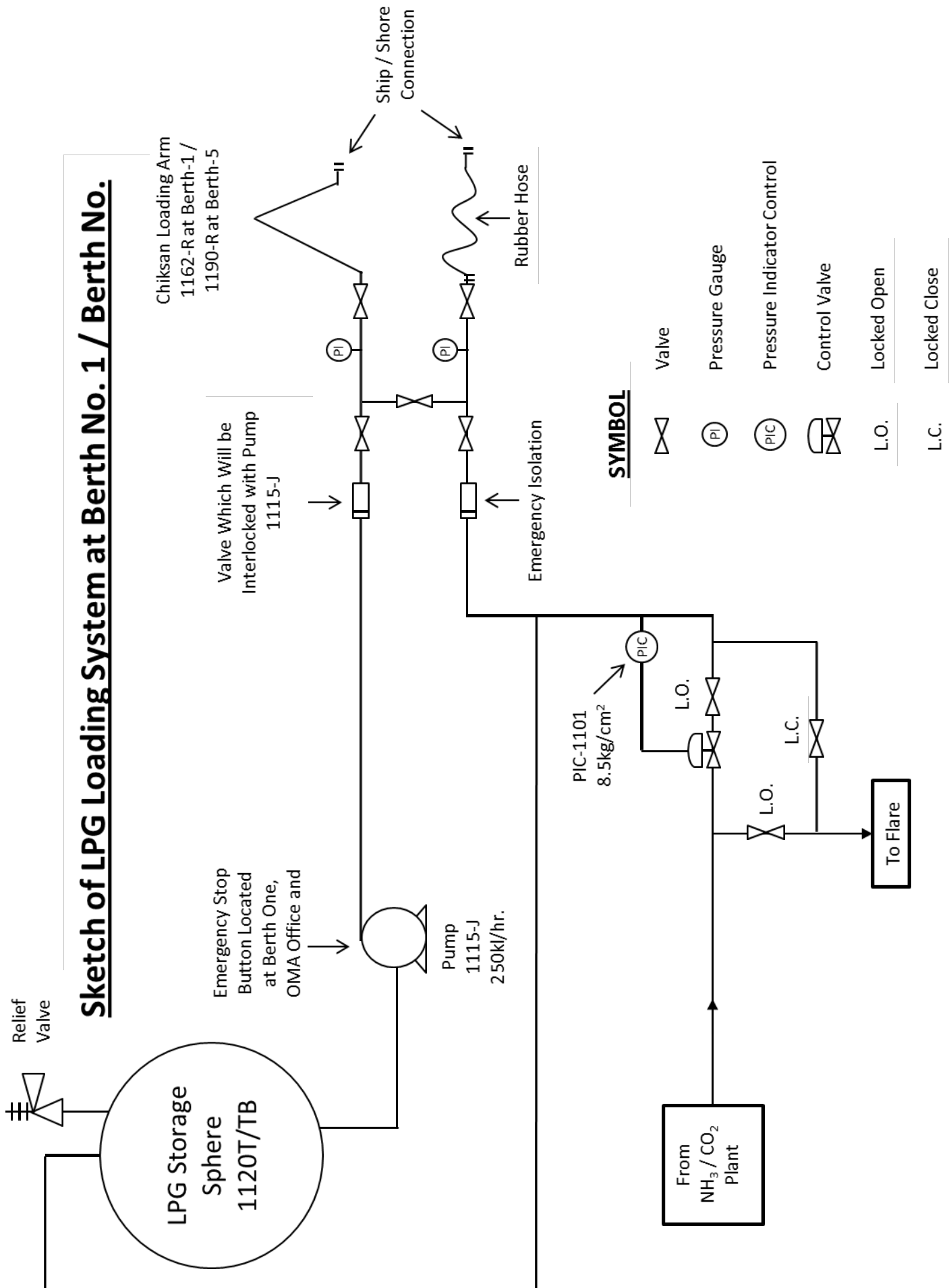
SPRING LINES



BREAST LINES

Issue No : 01
Date : 1/3/06
Ref : MSP 5.5.5

Sketch of LPG Loading System at Berth No. 1 / Berth No.



SYMBOL

	Valve
	Pressure Gauge
	Pressure Indicator Control
	Control Valve
L.O.	Locked Open
L.C.	Locked Close



APPROVED SMOKING ROOM

Master

Date :

Terminal Representative

Date :

Issue No. 01
Date : 1/7/99
Ref : MSP 5.06.02 (2)