SK Terminal Safety Regulation

Ⅰ. Safety Requirements

Responsibility for the safe conduct of operations whilst your ship is at this terminal rests jointly with you, as master of the ship, and with the responsible terminal representative. We with, therefore, before operations start, to seek your full co-operation and understanding on the safety requirements set out in the attached regulations which are based on safe practices widely accepted by the oil and tanker industries.

We expect you, and all under your command, to adhere strictly to these requirements throughout your stay alongside this terminal and we, for our part, will ensure that our personnel do likewise, and co-operate fully with you in the mutual interest of safe and efficient operations.

Before the start of operations, and from time to time thereafter, for our mutual safety, a member of the terminal staff, where appropriate together with a responsible officer, will make a routine inspection of your ship to ensure that the questions on the Ship/Shore Safety Check List can be answered in the affirmative. Where corrective action is needed we will not agree to operations commencing or, should they have been started, will require them to be stopped.

Similarly, if you consider safety is endangered by any action on the part of our staff or by any equipment under our control you should demand immediate cessation of operations.

In the event of continued or flagrant disregard of these safety requirements by any ship, we reserve the right to stop all operations and to order that ship off the berth for appropriate action to be taken by the charterers and owners concerned.

THERE CAN BE NO COMPROMISE WITH SAFETY.

Ⅱ. WARNING

Smoking Restrictions

Smoking is strictly prohibited within the restricted area enclosing all tanker berths and on board any tanker while at a berth, except in the enclosed spaces aboard designated by the master and approved by the terminal representative as " Smoking Areas ".

Failure to comply with this regulation can result in cessation of operations and/or un-berthing pending the complete investigation and receipt of written assurance from the master that effective controls have been established.

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 terminal representative considers it is safe to do so and any delay or cancellation in a vessel's departure resulted from the aforesaid will be for the vessel's account.

Pollution

It is an offence to :

a) spill oil.

b) emit excessive funnel smoke.

c) dump garbage / oily sludge / scales from ship's tank cleaning operation.

All incidents will be investigated and prosecution can result.

Ⅲ. Safety Regulations of SK Jetty Operation

A. General

1. Moorings

Ranging of the ship should be prevented by keeping all mooring lines taut at all times. Attention should be given to the movement of the ship caused by wind, currents, tides or passing ships and the operation in progress throughout the vessel's stay. At the wind velocities stated in the remark column of ship/shore safety check list, loading arm should be disconnected, cargo operations stopped or the vessel un-berthed. The tidal range at springs is approximately 9.8 meters and current velocities can approach 3.0 knots. Mooring lines are to be made fast on bitts and not on drum ends. Wire ropes and fibre ropes should not be used together in the same direction. Ships fitted with automatic tension winches should not use such winches in the automatic mode. The tension winch brakes should be applied and the mooring lines tended manually. All mooring lines used should be in good condition. The minimum mooring lines required at each end of a vessel berthed alongside are as follows :

- Vessel's deadweight below 5,000 tons : 2 heads/sterns, 2 springs.
- Vessel's deadweight 5,000 to 10,000 : 3 heads/sterns, 2 springs.
- Vessel's deadweight over 10,000 tons : 3 heads/sterns, 2 breasts, 2 springs.

2. Emergency Towing Wires

Emergency towing wires should be positioned on the off-shore bow and quarter of the ship. The eyes of the wires should be maintained not more than 1 meter above the waterline and adjusted during operations. They should be made fast on the ship's bitts, while having sufficient slack on deck to provide towing length of 20 meters. Means should be provided to prevent the slack from accidentally running into the water ; these means should be so arranged that they can easily be broken by a tugboat's crew.

3. Safe Access

Where possible, shore gangways will be made available, failing which ships must provide a gangway or accommodation ladder with a properly secured safety net fitted to it. Lifebuoys with lifelines should be available in the vicinity of the gangway or accommodation ladder. Ships fitted with the aluminium gangway or accommodation ladder must protect the undersides of it with a hard plastic or wooden strip. An accommodation ladder or pilot ladder should be ready on the off-shore side.

4. Ship Readiness

The ship should be able to move under its own power at short notice. Repairs and other work which may immobilize the vessel should not be undertaken at berth.

5. Deck Watch

The operation should be under constant control. Vessels are to have on board at least one senior deck officer (master or chief officer) and one senior engineer (chief or second). In addition, sufficient officers and crews should be retained to cope with any emergency situation. All personnel should be familiar with the dangers of the substances handled. The handling of cargo must be supervised by a responsible ship's officer.

6. Communication

Ship/shore communication in respect of cargo operations is by a VHF Ch.71 during her stay alongside. SK energy marine terminal will use the call-sign, "Evergreen No.1/2/3(jetty No.)". It is essential that a listening watch is maintained throughout by the responsible ship's officer. If communication by means of the VHF fails, vessels should re-establish communication by mobile phone provided by ship's agent.

7. Operational Procedures

The procedures for the intended operation should be pre-planned. The initial and maximum loading rates, topping off rates should be agreed, having regard to the maximum allowable pressure, flow rate and avoiding accumulation of static electricity. If the tank is in a non-inerted condition, during the initial stages of loading into each individual tank the flow rate in its branch lines should not exceed a linear velocity of 1 meter/second. When the bottom structure is covered and after all splashing and surface turbulence has ceased, the rate can be increased to maximum flow rates. At the start of and during cargo handling frequent checks should be made by the responsible officer to confirm that cargo is only entering or leaving the designated cargo tanks. During cargo loading ship's manifold valves should not be closed without notice to terminal in time. If the static accumulation properties of the substance handled and the situation in the tank so require, no conduction object should be inserted into that tank during loading and during a period of at least 30 minutes after the cessation of loading, which is applicable to non-inerted ships only. Synthetic fibre ropes should not be used with sample cans of sounding equipments. If the ship is informed that owing to the elevation of the shore tanks, pressure might exist in the shore line and no non-return (check) valves are fitted in the shore line, at the start of and during cargo discharging the ship's manifold valves should not be opened until an adequate pressure has been developed by the pumps. The pressure at ship's cargo manifold should not exceed 7.5 kg/cm^2 at any time throughout the discharge. In the event a serious leak is found on deck lines and/or manifolds, vessel should stop discharge, close manifold valves and alert the terminal immediately via the VHF Ch.71. The operation should be suspended and all deck and vent openings closed on the approach of an electric storm.

8. Fire Fighting Equipment and Emergency Fire Control Plans

Adequate units of fixed or portable fire-fighting equipment should be stationed to cover the ship's cargo deck. Fire main systems should be pressurized, or be capable of being pressured at short notice. Ensure that fire mains can be inter-connected in a quick and easy way utilizing the international ship/shore connection. A set of fire control plans should be permanently stored in a prominently marked weather-tight enclosure outside the deckhouse for the assistance of shoreside fire-fighting personnel.

9. Scuppers, Drip Trays, Unused Connections and Overboard Discharge Valves

Cargo hoses should be properly fitted and rigged so as to prevent strain and stress beyond design limitations. All scuppers on board should be properly plugged during the operations. Accumulation of water should be drained off periodically. Ship's manifolds should be provided with fixed drip trays. When only liquefied gases are being handled, the scuppers may be kept open, provided that an ample supply of water is available at all times in the vicinity of the manifolds. Unused cargo and bunker line connections should be closed and blanked. Blank flanges should be fully bolted. The security of sea and overboard discharge valves should be checked visually.

10. Tank Hatches

Apart from the openings in use for tank venting all openings to cargo tanks should be closed and gastight. Ullaging and sampling points may be opened for the short periods necessary for ullaging and sampling. Ships using an inert gas system must have the system fully operational and ensure that they follow their inert gas system manual. In the event of the failure of the inert gas system, cargo discharge must be stopped and action taken immediately to prevent any air being drawn into the tanks. Attention is drawn to the dangers of pyrophoric iron sulphide (See Part B).

11. Electrically Operated Equipment

Battery operated hand torches and radio-telephone sets should be of an intrinsically safe type. The ship's main radio station should not be used, except for receiving purposes. The main transmitting aerials must be disconnected and earthed. The ship's radar installation should also not be used without authority from shore. The use of portable electrical equipment on wandering leads is prohibited.

12. Insulating Ship/Shore Connections

Bonding wire is not necessary while alongside because insulating flanges are inserted within the length of the loading arms.

13. External Doors, Air Conditioning Intakes and Pumproom Ventilation

External doors, windows and portholes in the accommodation should be closed. Window type air conditioning units should be disconnected from their power supply. Air conditioning and ventilator intakes which are likely to draw in air from the cargo area should be closed. Pump rooms should be mechanically ventilated and the ventilation system should be kept running throughout the operation.

14. Smoking and Naked Lights Requirements

Smoking on board may only take place in rooms specified by the Master in consultation with the terminal representative. No smoking is allowed on the jetty or in the refinery area. Places which are directly accessible from the outside should not be designated as places where smoking is permitted. Rooms designated as places where smoking is permitted should be clearly marked as such. In the designated smoking places, all ports and doors into passageways should be kept closed except when in use. The use of open fire on board the ship should be prohibited. Open fire systems in galleys is banned. Steel preparation, maintenance or repairs involving welding, burning, the use of abrasive tools, chipping or scraping is prohibited.

15. Boats Alongside

Bunkering and supplying fresh water from lighters/barges is not permitted. The boats providing service to a vessel should not await alongside a berth. Once personnel or equipment have been transferred on board, such boat must proceed to a clear area at least 100 meters away from the vessel and wait in that area until requested by the vessel to approach in order to embark persons or to load material or equipment. The stores derricks/crane at the aft end of the vessel should always be used. Should this not be possible however and it is necessary to use mid-ships derrick/crane then unless the vessel is operating with Inert Gas and all tank openings are closed, all cargo operations must cease until all stores operations are completed.

16. Prevention of Marine Pollution

We draw your attention to the Korean Government Regulations of the Prevention of Marine Pollution. In the event of any spillage of oil from a vessel, irrespective of reasons or source, we will take all necessary steps to remove and clean up the spilled oil, regardless of master's request or approval, for the mutual benefit. All expenses arising from such spillage involved in cleaning-up charges shall be for owner's account. Refer to the tariff of KOEM.(Korea Marine Environment Management Company)

17. Security

Ship's personnel are not allowed to walk through the terminal installation. Shore leave for ship's personnel is only permitted by the ferry boat. The use of cameras anywhere on the jetty or in the refinery area is prohibited.

B. Inert Gas Operation and Pyrophoric Iron Sulphide

There is no danger of ignition from a pyrophoric exothermic reaction as long as the cargo tanks remain inerted. However, when the inert gas plant was inoperable, cargo or ballast discharge would cause air to enter the cargo tanks and result in a flammable atmosphere which could be ignited by pyrophoric deposits if present. Against this background the OCIMF and ICS recommend the following precautions for crude oil tankers with inert gas systems :

- Diligent maintenance of inert gas plants should be stressed.
- Spares should be kept on hand for critical parts which cannot be obtained quickly or which can fail abruptly, such as the fans.
- In the event of inert gas plant failure prior to or during cargo or ballast discharge, discharge should not commence or continue until the inert gas plant operation is restored, or an alternative source of inert gas is provided.

The inert gas system should be in safe working condition with particular reference to all interlocking trips and associated alarms, deck seal, non-return valve, pressure regulating control system, main deck IG line pressure indicator, individual tank IG valves, when fitted, and deck P/V breaker. Prior to commencement of cargo operations, each cargo tank atmosphere should be checked to verify an oxygen of 8% or less by volume. Inerted cargo tanks should at all times be kept at a positive pressure. All fixed and portable oxygen analyzers should be calibrated and checked as required by the company and/or manufacturer's instructions.

C. Crude Oil Washing Operations

The approved Crude Oil Washing Manual contains a Pre-Arrival Crude Oil Washing Check List, specific to each ship, which should be completed prior to arrival at the discharge port where crude oil washing is intended. The approved Crude Oil Washing Manual contains a Crude Oil Washing Check List, specific to each ship, for use before, during and after crude oil washing operations which should be completed by a responsible ship's officer at the appropriate times in the presence of the terminal representative.

Only fixed tank washing machines should be used for crude oil washing. During crude oil washing, the system must be kept under constant observation so that any leak can be detected immediately and action taken to deal with it. The "dry" crude oil, which doesn't contain water, is to be used as a source of crude oil washing fluid. Before washing begins any tank which is to be used as a source of oil for washing should be partly discharged until the discharge of a layer reaches to at least one meter in depth in order to remove any water which has settled out during the voyage. If the slop tank is to be used as a source of oil for washing, it should first be completely discharged ashore and refilled with "dry" crude oil. The person in charge of crude oil washing operations must be suitably qualified in accordance with the requirements laid down by the flag administration of the vessel.

D. Bulk Liquid Chemicals

1. Information

Information on the product to be handled should be available on board the ship before and during the operation. This information should include :

- a cargo stowage plan.
- a full description of the physical and chemical properties, including reactivity, necessary for the safe containment of the cargo.
- action to be taken in the event of spills or leaks.
- counter measures against accidental personal contact.
- fire-fighting procedures and fire-fighting media.
- procedures for cargo transfer.

When cargoes required to be stabilized or inhibited are to be handled, information should be exchanged thereon. Special attention should be given to any products which are being handled which may be water reactive or require specialized fire-fighting procedures.

2. Protective Equipment

Suitable protective equipment including self-contained breathing apparatus and protective clothing should be readily available in sufficient numbers for operational personnel on board. Personnel required to use self-contained breathing apparatus during operations should be physically fit and trained in its safe use.

3. Counter Measures against Personal Contact with Cargo

Sufficient and suitable means should be available to neutralize the effects and remove small quantities of spilled products. A suitable safety shower and eye rinsing equipment should be fitted and ready for instant use in the immediate vicinity of places on board where operations regularly take place. Measures should be taken to maintain the water at a safe temperature.

4. Transfer Hoses

Each transfer hose should be indelibly marked so as to allow the identification of the products for which it is suitable, its specified maximum working pressure, the test pressure and the last date of testing at this pressure, and, if used at temperature other than ambient, its maximum and minimum service temperatures. Whenever cargo hoses are used to make connections within the ship or shore permanent pipeline system, these connections should be secured and kept as short as possible and be electrically continuous to the ship pipeline. The use of non-permanent equipment inside tanks is not permitted.

5. Automatic Shut Down System

In case where automatic shutdown system are used, the cargo handling rate should be so adjusted that a pressure surge evolving from the automatic closure of any such valve does not exceed the safe working pressure of either the ship or shore pipeline system. Alternatively, means, such as recirculation systems and buffer tanks, may be fitted to relieve the pressure surge created.

6. Portable Vapour Detection Instruments, Cargo System Gauges and Alarms

Suitable equipment should be available to calibrate those instruments capable of measuring flammability. Calibration should be carried out before the operation commences. Cargo system gauges and alarms should be regularly checked to ensure they are in good working order. The system alarm should be set to the required level.

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