

# **PART 3**

  

# **TERMINAL INFORMATION**



## Chapter 15

# TERMINAL MANAGEMENT AND INFORMATION

This Chapter describes the risk based systems and processes that should be in place to ensure the safe and efficient operation of the terminal. It covers the need for full supporting documentation, for example operating manuals, drawings and maintenance records for the facility and its equipment, copies of relevant legislation, and codes of practice. It also deals with the need for a clear, documented definition of the requirements for tanker and berth compatibility.

Terminal manning is discussed with regard to ensuring effective supervision of operations and activities at the tanker/shore interface.

### 15.1 Compliance

Terminals should comply with all applicable international, national and local regulations, and with company policy and procedures. Where a self-regulatory regime exists, terminals should meet the spirit and intent of any applicable codes and the guidelines for their implementation.

Terminal management should provide a healthy and safe working environment and ensure that all operations are conducted with minimum effect on the environment whilst complying with the regulatory system in force and recognised industry codes of practice. In this regard, the OCIMF publication 'Marine Terminal Baseline Criteria and Assessment Questionnaire' could be used as a reference.

Terminals should maintain current copies of regulations and guidelines applicable to their operations (see Section 15.7).

Terminals should seek assurance that tankers visiting their berths comply with applicable international, national and local marine regulations.

Terminals should have a management system in place, which is able to demonstrate and document proof of compliance with regulatory requirements and company policy and procedures. Terminal management should designate a person to be responsible for ensuring compliance with the regulations, company policy and procedures.

## 15.2 Hazard Identification and Risk Management

Terminals should have formal risk management processes in place, which demonstrate how hazards are identified and quantified, and how the associated risk is assessed and managed. This will usually be achieved by the use of a Permit to Work system (see Section 19.1.3).

The risk management should include formal risk assessments, which address any changes in design, manning or operation, and should follow on from the design case risk assessment for the facility. Risk assessments should be structured in order to identify potential hazards, assess the probability of occurrence, and determine the potential consequences of the event. The output of the risk assessment should provide recommendations on prevention, mitigation and recovery. Risk assessments should be undertaken as part of the process when modifications to the terminal equipment and facilities are proposed. They should also be carried out as part of the safety management process that is used to permit the conduct of operations whose scope is not covered in the current operational procedures.

Terminals should conduct reviews, typically annually, of their facilities and operations to identify potential hazards and the associated risks, which may demonstrate the need for additional or revised risk assessments. Reviews should also be carried out when there are changes to the terminal facilities or operations, for example, changes in equipment, organisation, the product being handled, or the type of tankers visiting the terminal.

Terminal operating procedures should provide documentation and processes for ensuring the effective management and control of identified risks.

Records of all reviews and assessments should be kept.

## 15.3 Operating Manual

Terminals should have a written, comprehensive and up to date Terminal Operating Manual.

The Terminal Operating Manual is a working document and should include procedures, practices and drawings relevant to the specific terminal. The Manual should be available in the accepted working language to all appropriate personnel.

The Terminal Operating Manual should define the roles and responsibilities of the berth operating personnel and the procedures associated with emergencies such as fire, product spillage or medical emergency. A separate emergency response manual should be provided to cover such topics as emergency call out procedures and interaction with local authorities, municipal emergency response organisations, or other outside agencies and organisations. (See Chapter 20 for more detailed guidance on emergency planning and response.)

Terminals should also have a documented management of change process for handling temporary deviations and for making permanent changes to the procedures in the operating manual. It should define the level of approval required for such deviations and changes to a prescribed procedure.

## 15.4 Terminal Information and Port Regulations

Terminals should have procedures in place to manage the exchange of information between the tanker and the terminal, before the tanker berths and/or upon arrival. This will ensure the safe and timely arrival of the tanker at the berth, with both parties ready to commence operations.

Detailed information on communications at the tanker/shore interface is given in Chapter 22. Reference should also be made to Chapter 6 for information on security at the tanker/shore interface.

## 15.5 Supervision and Control

### 15.5.1 Manning Levels

Personnel should be trained in the operations undertaken by them and have site specific knowledge of all safety procedures and emergency duties.

Terminals should provide sufficient manpower to ensure that all operational and emergency conditions can be conducted in a safe manner, taking into account:

- Effective monitoring of operations.
- Size of the facility.
- Volume and type of products handled.
- Number and size of berths.
- Number, type and size of tankers visiting the terminal.
- Degree of mechanisation employed.
- Amount of automation employed.
- Tank farm duties for personnel.
- Fire-fighting duties.
- Liaison with port authorities and adjacent or neighbouring terminal operators.
- Personnel requirements for port operations including mooring line handling and hose/hard arm handling.
- Fluctuations in manpower availability due to holidays, illness and training.
- Personnel involvement in emergency and terminal pollution response.
- Terminal involvement in port response plans, including mutual aid.
- Security.

When considering the effective monitoring of the tanker/shore interface, continuous supervision should be aimed at preventing hazardous situations developing.

In establishing manning levels, due account should be taken of any local or national legal requirements. Consideration should be given to the avoidance of fatigue that may result from extended hours of work, or insufficient rest periods or time off between shifts.

### 15.5.2 De-Manning of Berths During Cargo Handling

Terminal operators may wish to reduce manning at the berth or de-man berths during cargo transfer operations. Where this happens, it should not result in a reduction of safe operational standards, operational surveillance or emergency response capability. The tanker should always be informed before berth personnel depart, and the method of contact confirmed and agreed.

The tanker/shore connections should remain under continual observation. This may be achieved by remote means, such as by a closed circuit television system, but sufficient numbers of personnel should always be available to take corrective action if a hazardous situation arises.

Supervision by systems incorporating television should only be used where they are continuously manned and give effective control over the cargo operations. Such systems cannot in themselves take corrective action and should not be regarded as a substitute for 'hands on' human supervision at the tanker/shore interface

### 15.5.3 Checks on Quantity During Cargo Handling

The Terminal Representative should regularly check pressures in the pipeline and hose or hard arm and compare the estimated quantity of cargo loaded or discharged with the tanker's estimate. An unexpected drop in pressures, or any marked discrepancy between tanker and terminal estimates of quantities transferred, could indicate pipeline or hose leaks and require that cargo operations be stopped until investigations have been carried out.

### 15.5.4 Training

Terminals should ensure that the personnel engaged in activities relating to the tanker/shore interface are trained and competent in the duties that are assigned to them. They should be thoroughly familiar with those sections of this document that are applicable to their work location and duties. (See Chapter 13.2).

Personnel should be aware of (Inter)national and local regulations and port authority requirements that affect the terminal operations and the manner in which they are implemented locally.

Terminals should consider adoption of the OCIMF 'Marine Terminal Training and Competence Assessment Guidelines for Oil and Petroleum Product Terminals' in a manner appropriate to their operations. This document will assist in determining the training needs of the terminal.

## 15.6 Tanker and Berth Compatibility

Terminals should have a definitive, comprehensive list of tanker dimensional criteria for each berth within the terminal. This information should be made available to both internal and external contacts. Some typical examples of criteria are given in the following sections.

### 15.6.1 Maximum Draught

Maximum draught should preferably be determined in consultation with authorities and should be based upon the restricting depth at the berth or in the approaches, related to a specific datum, for example Chart Datum or Lowest Astronomical Tide.

A minimum Under Keel Clearance (UKC) should be defined taking local conditions into account

Maximum draught should be defined for the usual water density at the berth.

When defining maximum draught, due regard should be given to unusual tidal or environmental conditions that may affect water depth.

### 15.6.2 Maximum Displacement

The full load displacement figure should be quoted to define the maximum size of tanker allowed on the berth.

A maximum displacement figure may also be quoted for the berthing operation where there are restrictions on berthing energy or load limits on fendering systems. The use of deadweight as a parameter for setting tanker size limitations is not recommended because this on its own is not a measure of size or of total weight of vessel for calculation of berthing energies.

### 15.6.3 Length Overall (LOA)

This is the maximum length of the tanker and may be a limiting factor when tankers have to transit locks or turn in a turning basin.

### 15.6.4 Other Criteria

In addition, terminals may specify further dimensional limitations, for example:

- **Minimum Length Overall (LOA):** This may be specified to ensure that small tankers are not too small to tie up to or lie safely alongside the fendering at berths designed for much larger tankers.
- **Maximum or Minimum Bow to Centre Manifold (BCM):** This is usually to ensure alignment between tanker and shore manifold connections.
- **Minimum Parallel Body Length Forward and Aft of the Manifold:** This is to ensure that the tanker will rest against the fenders when in position with the cargo connection made.
- **Maximum Beam:** This is required, for example, due to restrictions imposed by a lock, dock or river transit.
- **Maximum Allowable Manifold Height Above the Water:** This is to ensure that the tanker can keep the cargo arms connected throughout the discharge and at all states of the tide or actual water level. At some tidal locations, it may be necessary to disconnect the loading arms during the high water period.

- **Minimum Allowable Manifold Height Above the Water:** This is required, for example, to ensure that a loaded tanker can be connected to the cargo arms. At some tidal locations, it may be necessary to disconnect the cargo arms during the low water period.
- **Maximum Air Draught:** This is specified to ensure that tankers can pass beneath bridges and overhead obstructions, power cables etc. The local harbour authority may define a minimum safe clearance distance.

In defining these criteria, care should be taken in establishing the baseline data from which they are derived and ensuring that they are correctly reconciled. In addition, terminals should clearly identify the units of measurement used.

## 15.7 Documentation

Terminals should maintain a set of up to date documents to ensure compliance with regulations, procedures and good practice. This should provide comprehensive information on facilities and equipment associated with the management of the tanker/shore interface.

Documentation should provide current information on topics that include the following:

- Legislation, including national and local operational requirements and health and safety legislation.
- Industry guidelines, Company policies, and health and safety policy.
- Operating manuals, maintenance and inspection procedures, and site plans and drawings.
- Records of internal and external audits, government inspections, health and safety meetings, permits to work and local procedures, for example.
- Certificates issued for equipment and processes.

Documentation available on site should include a comprehensive set of 'as built' construction drawings and specifications of the berth and associated terminal facilities, including all modifications made since they were first commissioned. This documentation should form the basis of any structural, water depth or other survey carried out to inspect the fabric of the facilities.

A record of the major equipment items should be kept. This will include, for example, specifications, purchase orders and inspection and maintenance data. Major equipment could include transfer arms, gangways, ladders and escape routes, access towers, large valves, pumps, meters, fenders, bollards and mooring hooks.