

Non-Cargo Liquid Transfer Practices In Australian Ports



Table of Contents

Foreword	2
1. Preliminary	3
1.1 Title.....	3
1.2 Purpose	3
1.3 Scope and Application.....	3
1.4 Definitions.....	3
1.5 Reference Documents	4
2. Risk Management Process	5
2.1 Decision Making.....	5
2.2 Hazard Identification.....	5
2.3 Risk Assessment	5
2.4 Risk Control	6
2.5 Risk Control Measures	6
3. Roles and Responsibilities	8
3.1 Requirements for the Ship.....	8
3.2 Requirements of a Barge Supplier	11
3.3 Requirements of the Road Tanker	13
3.4 Requirements for the Shore Pipeline Supplier	15
4. Documentation.....	17
4.1 Notification	17
4.2 Record Keeping	17
4.3 Bunker Suppliers	17
4.4 Register of Local Fuel Oil Suppliers	18
4.5 Representative Fuel Samples	18
5. Training & Inspection Programs.....	19
5.1 Training	19
5.2 Training Outcomes.....	19
5.3 Inspections	19
6. Spill Containment	20
6.1 Spill Containment.....	20
6.2 Impact of Spills	20
7. Emergency Actions.....	21
7.1 Emergency Procedures	21
7.2 Emergency Plans	21
7.3 Emergency Equipment	21
Appendix 1	22
Sample – Non-Cargo Liquid Notification Form	
Appendix 2	23
Sample – Ship/Shore Safety Checklist.....	
Appendix 3	24
Sample – Barge Safety Checklist	
Appendix 4	25
Sample – Road Tanker Safety Checklist.....	
Appendix 5	26
References and Sources of Information.....	

Foreword

Port Managers have a responsibility to their local communities to ensure that operational activities in their ports are conducted in a safe and environmentally sustainable manner.

Non-Cargo Liquid Transfer operations between ship/shore and barge/road tankers should be carefully planned and conducted in a safe and controlled environment. Port Managers may audit and monitor the systems that ships, berth operators, bunker fuel suppliers, waste and other liquid transfer operators have in place that are commensurate with this "Non-Cargo Liquid Transfer Practices" document to prevent the escape of product into the air, land, marine or river systems.

This can be achieved through the following strategic objectives:

- Infrastructure and work systems in place
- Trained staff undertaking the operation
- Facilitating the transfer operation
- Monitoring the safe and effective progression of the transfer operation
- A co-ordinated reporting system

1. Preliminary

1.1 Title

This document is cited as the “Non-Cargo Liquid Transfer Practices”, hereinafter referred to as “the practice”.

1.2 Purpose

The purpose of this “Non-Cargo Liquid Transfer Practices” document is to provide practical guidance and advice on the safe and effective transfer of Non-Cargo Liquid products between ships, barges, road tankers and shore based suppliers.

- This practice is not designed to replace or modify the requirements in any Acts or Regulations. It will assist in complying with Environmental Legislation and other applicable legal requirements as required in each state of Australia. It recommends safe work practices that can be used to reduce the risk of work related injury.
- Some ports may have in place existing Non-Cargo Liquid Transfer auditing and monitoring systems that meet and exceed the recommendations made in this practice, it should not be seen as replacing these systems.
- There may be circumstances where a risk assessment process is appropriate. This may identify specific recommendations not covered by this practice. In such circumstances, additional risk control measures need to be adopted.

1.3 Scope and Application

This practice covers transfers where a flexible or portable hose is connected for the transfer of:

- Fuel oils; such as heavy oil and diesel oil for running machinery
- Lubricating oils
- Hydraulic oil
- Transformer oil
- Waste oil including slops, residues, sludge, sediments and recycled oil
- Tank/hold washings (hazardous as well as non-hazardous)
- Slops and bilge residues mixed with water
- Vegetable oils and tallow
- Grey water and sewage
- Ballast water not approved by Australian Quarantine Inspection Service (AQIS) and local Environment Protection Authority (EPA)

This practice does not cover:

- Internal transfers
- Fresh water transfer
- Ballast water transfer approved by AQIS and local EPA

1.4 Definitions

1.4.1 Hazard – Means any thing, activity, occurrence or circumstance of any kind that has the potential to cause injury to persons, to damage property or pollute the environment by:

- An explosion, fire, harmful reaction or the evolution of flammable, corrosive or toxic vapours involving dangerous goods; or
- The escape, spillage or leakage of any dangerous goods

- 1.4.2 **Risk** – Means the likelihood of injury to persons, damage to property or pollution of the environment being caused by the hazard.
- 1.4.3 **Responsible Person** – A person appointed by the employer or the Master of the ship and empowered to take all decisions relating to a specific task, having the necessary knowledge and experience for that purpose (ISGOTT).
- 1.4.4 **Agent** – A person or organisation responsible for the administrative details of a ship's visit to the port.
- 1.4.5 **Supplier/Receiver** – Means the organisation that supplies or receives Non-Cargo Liquids via a bunker barge, road tanker or shore pipeline.
- 1.4.6 **Intrinsically Safe** – Means an electrical circuit or a part of a circuit is intrinsically safe, i.e. any spark or thermal effect produced normally (i.e. by breaking or closing the circuit) or accidentally (e.g. by short circuit or earth leak) is incapable, under prescribed test conditions, of igniting a prescribed gas mixture.
- 1.4.7 **Reasonably Practicable** – To determine what is practicable, the factors that should be considered are:
- The severity of the hazard or risk
 - The likelihood of serious injury or damage
 - The state of knowledge about the hazard or risk
 - Information you know about the hazard or risk
 - Information provided to you about the hazard or risk
 - Ways to remove or mitigate the risk
 - The availability and suitability of risk controls
 - The cost of removing or mitigating the risk
 - The cost benefit ratio must be positive
- 1.4.8 **AMSA** – Australian Maritime Safety Authority (Commonwealth)
- 1.4.9 **OTS** – Office of Transport Security (Commonwealth)
- 1.4.10 **AQIS** – Australian Quarantine Inspection Service (Commonwealth)
- 1.4.11 **Customs** – Australian Customs Service (Commonwealth)
- 1.4.12 **Port Manager** – The manager of the port who has day to day responsibility for activities within the port.

1.5 Reference Documents

Referenced documents such as Acts, Industry Codes of Practice, ISO Standards and Australian Standards have been referred to throughout this document. The latest edition should always be followed to ensure that the latest safety developments are incorporated.

2. Risk Management Process

This is a process that assists in identifying hazards and implementing corrective measures to eliminate or reduce the risks associated with the Non-Cargo Liquid Transfer operation.

2.1 Decision Making

The hazard identification and risk assessment process for a Non-Cargo Liquid Transfer operation should identify key personnel who are trained to undertake the transfer. However, given the various types of transfer, personnel will need to familiarise themselves with the specific risks associated with each operation.

2.2 Hazard Identification

The entire process needs to be examined to identify any hazards, for example:

- A single hazard (mooring rope secured to a railing, insufficient ullage space)
- Multiple hazard (tank overflow, oil spill)
- Cumulative hazard (fire, explosion, environmental impact)

Other hazards also need to be considered which may be external to the process. These hazards can include:

- Working from heights
- Working near water
- Prevailing weather conditions
- Proximity of other cargoes on board the ship
- Proximity of sensitive activities and facilities on board and adjacent to the ship
- Hot Work

Information for identifying hazards can be obtained from sources such as:

- Company Procedures
- International Ship Management (ISM) Code
- International Safety Guide on Oil Tankers & Terminals (ISGOTT)
- International Bulk Carrier (IBC) Code
- Marpol 73/78

2.3 Risk Assessment

There are various methods of carrying out a risk assessment. The purpose of the risk assessment is to determine the following:

- Possible injury to people from the transfer process
- Possible damage to property from the transfer process
- Possible pollution to the environment
- The risks that need to be controlled
- The order in which the risks need to be controlled

A generic assessment can be used to minimise duplication and to streamline the process. However, a responsible person should ensure that the risk assessment is:

- Valid for that transfer process
- Is reviewed and current

Risk Management Reference Documents
Australian Standard AS/NZS 4360: Risk Management
HB 4360: Risk Management Guidelines

2.4 Risk Control

Risk control is the process of determining and implementing corrective control measures to eliminate or reduce the risk associated with the transfer operation.

Risk controls should, where possible, be applied to the highest priority risk. This should not, however, preclude attention to lesser risks that can be easily dealt with.

All risks with unacceptable consequences require immediate action. Risk control measures must be reviewed so as to ensure that any action taken to correct one risk does not itself initiate into another risk.

2.5 Risk Control Measures

Risk control measures have a preferred sequence of application which are:

2.5.1 Elimination

This is the removal of the risk at the source. As Non-Cargo Liquid Transfers must take place, complete elimination of all risks is not a likely solution, but some of the associated activities that may give rise to a risk may be eliminated. For example, eliminate all sources of ignition in the immediate area.

Sources of Ignition

Some sources of ignition are:

- Vehicles
- Matches, lighters
- Non intrinsically safe equipment such as portable VHF radios, mobile phones, portable electrical equipment, torches, electrical cables
- Battery isolator switches
- Spark producing tools

2.5.2 Substitution

Substitute hazardous items by less hazardous ones.

Types of Substitution

- Hoses whose couplings are attached by clamps replaced by robust hoses with an internal lining supported by a steel wire
- Using diesel powered vehicles

2.5.3 Isolation

Isolation is the separation of dangerous activities from people, property or another dangerous activity.

Isolation

Examples of isolation are:

- Barricading area of operation
- Stopping cargo operations in the short term
- Postponing hot work operations until transfer operation completed

Formatted: Bullets and Numbering

2.5.4 Engineering Controls

Engineering controls use measures to change the physical characteristics of equipment or processes to reduce the risk associated with the transfer operation. However, over-reliance on equipment, lack of testing and calibration of equipment can lead to system failures.

Engineering Controls

Examples of engineering controls are:

- Fitting sensors and controls for liquid level, pressure and temperature
- Scupper plugs, save alls and drip trays to deal with a spill
- Intrinsically safe light fittings
- Communication equipment e.g. mobile phones
- High level alarms and overflow devices
- Interlocking valves and switches

2.5.5 Administrative Controls

Administrative controls are systems of work that eliminate or reduce the risk. They consist of properly designed and implemented work practices and procedures used in supporting other control measures.

Administrative Controls

Examples of administrative controls are:

- Work method statements, instructions and checklists
- Permits to work systems
- Training and supervision
- Workplace monitoring

2.5.6 Personal Protective Equipment (PPE)

PPE consists of devices and clothing that provide the individual with a level of protection from the hazard. It should not be used as a sole control measure, but used in addition to engineering and administrative controls.

PPE should be selected to ensure that:

- The devices are suitable for the individual
- Provides the level of protection for the intended task
- Complies with Australian Standards or internationally recognised standards
- It is clean, functional and ready for deployment
- It is maintained by trained staff to a recognised service program
- There are clear instructions on the proper use of the equipment
- It's use should be enforced by the employer

Personal Protective Equipment

Examples of personal protective equipment are:

- Full length working apparel, safety footwear, gloves, eye glasses or face shields, hard hats
- Safety harness and fall arrest systems
- Air and gas monitors

3. Roles and Responsibilities

It should be noted that whilst headings under 3.1, 3.2, 3.3 and 3.4 are similar, roles and responsibilities for each area are different.

3.1 Requirements for the Ship

3.1.1 Introduction

This section is designed to assist the Master of a ship and the crew on board the ship, when undertaking Non-Cargo Liquid Transfer Practices to identify the hazards and assess the risk, thereby adopting corrective control measures to eliminate or minimise the risk as is reasonably practicable.

The Master of the ship and the crew on board has a duty of care towards their own ship as well as that of the supplier/receiver of Non-Cargo Liquids (barge, road tanker, shore pipeline) and should ensure that all assessments cover the entire transfer operation.

3.1.2 Notification

Port Managers generally require that all Non-Cargo Liquid Transfer operations are recorded and they may be audited for compliance by the Port Managers.

The ship's agent should ensure that a copy of this practice is made available to the Master of the ship, before the ship's arrival in the port, to assist the Master in becoming aware of local port conditions on Non-Cargo Liquid Transfers and to allow time for preparatory work.

The ship's agent must notify (where applicable) the local Port Manager of the intention to undertake Non-Cargo Liquid Transfers and seek any relevant permits.

Port Managers require that this notification be received at the designated port office at least 24 hours before the Non-Cargo Liquid Transfer operation takes place.

An example of a Non-Cargo Liquid Transfer notification form is provided in Appendix 1.

General Notifications (Recognised processes)	
	<p>Some general notifications are:</p> <ul style="list-style-type: none"> ▪ The ship's agent notifies the Port Manager of the intention to undertake a Non-Cargo Liquid Transfer and seek any relevant permits ▪ The barge master informs the Port Manager of his movement within the harbour ▪ The road tanker informs terminal security, through the ship's agent, of his arrival at the terminal

3.1.3 Consultation

Consultation and planning processes for Non-Cargo Liquid Transfer Practices should take place even before the ship has arrived in the port. This will give enough time for the ship's agent, suppliers/receivers to communicate effectively by providing adequate information in an appropriate format.

3.1.4 Preparation

When a ship arrives in port the level of activity on board is usually very high. This is due to the agent, government authorities (AMSA, OTS, AQIS, Customs), stevedores, ships providers and surveyors all boarding the ship on arrival. Therefore it is prudent of the Master to prepare a risk assessment for Non-Cargo Liquid Transfer Practices before the arrival of the ship so that, if necessary, elements of this risk assessment can be discussed with the Port Manager and the supplier/receiver. This could be considered as a part of the consultative process and any predetermined hazards should be discussed on the arrival of the supplier/receiver.

Similarly, any preparatory work which is mandatory for the transfer may be undertaken before the arrival of the ship in port.

(With respect to any fuel oil used on board ships, MARPOL Annex VI restricts the sulphur content to a maximum of 4.5% m/m, and requires that a ship retains a bunker delivery note on board and that fuel samples are retained under the control of the ship (either on board or in a designated company office). It is recommended that prior to arrival, the ship's agent confirms with the selected bunker supplier that compliant fuel, documentation and samples will be provided).

Preparatory work (Recognised processes)	
	<p>International Ship Management (ISM) Code, International Safety Guide on Oil Tankers and Terminals (ISGOTT) and company operating procedures provide guidance which can be used to prepare the ship for Non-Cargo Liquid Transfers. Such as:</p> <ul style="list-style-type: none"> ▪ Firefighting equipment ▪ Plugging scuppers ▪ Making space (ullage) ▪ Organising blank flanges ▪ Cleaning drip trays and save all ▪ Ship/barge/road tanker communications plan <p>It would be prudent to develop a 'safety checklist' as exemplified in Appendix 2.</p>

3.1.5 The Non-Cargo Liquid Transfer Operation

On arrival of the supplier/receiver, the ship's officer who is in management control of the operation, should meet with the supplier/receiver and discuss the whole transfer operation. They will jointly agree to the transfer operation using a 'Safety Checklist' drawn up by the supplier or the ship's captain or both. A sample of such a checklist is shown in Appendix 2, 3 and 4.

The transfer operation should not start until the conditions of the 'Safety Checklist' have been complied with and jointly endorsed by representatives of the ship and supplier to indicate understanding of and agreement with the terms and conditions of the check list. Any changes to the agreed transfer process must be jointly agreed.

Ship's personnel involved in the transfer operation should not be distracted by other tasks and remain at their stations throughout the operation.

Constant communication should be maintained between the ship and the supplier/receiver:

- To confirm starting and stopping transfer operations and emergency stops
- To confirm transfer rates, pressures and quantities
- To verify line and tank integrity
- For Emergency Management

3.1.6 Cessation of all Works

All work including loading/unloading of cargo should stop during the Non-Cargo Liquid Transfer process if product being transferred has a flashpoint below 60 degrees Celsius (Flammable Liquid).

3.1.7 Maintenance of Hoses

All hoses should meet international standards and be inspected to comply with pressure and suitability of task and product requirements. The Port Manager is not responsible for the condition of hoses and pipes but may audit their condition and suitability at any time.

Any variations that impede the safety or the security of the transfer process should result in immediate stoppage of the transfer process. The transfer process should only resume when a risk assessment has been undertaken and all issues are satisfactorily resolved.

3.1.8 Stopping of Transfer Operations

The transfer operation should stop:

- If directed by the Port Manager.
- If communication between the ship and the supplier/receiver fails or is unable to be maintained.
- If a leak or spill is detected in the transfer process.
- No appreciable change or movement detected in the receiving tank.
- If there is an emergency on board the ship or barge or shore.

General Requirements (Recognised processes)	
	<p>Some general requirements:</p> <ul style="list-style-type: none"> ▪ If the supplier is a barge, the barge must be secured to the ship using approved mooring points ▪ There is safe access between the ship and barge ▪ A designated hose party must connect and disconnect transfer hoses ▪ Immediate access to an emergency spillage kit with absorbent pads and clean up equipment to deal with any accidental spillage ▪ No ignition sources within 25 metres of any bunker flange and/or vent pipes associated with the transfer operation ▪ Visual watch throughout the entire transfer operation ▪ Ensure all areas are clean and free from any spillage ▪ All incidents must be reported to the Port Manager ▪ Ensure finalisation of paper work

3.2 Requirements of a Barge Supplier

3.2.1 Introduction

This section is designed to assist the Master of a barge and the crew on board the barge when undertaking Non-Cargo Liquid Transfer Practices to identify the hazards and assess the risks, thereby putting in corrective control measures to eliminate or minimise the risk as is reasonably practicable.

The Master of the barge and the crew on board has a duty of care towards their own ship as well as that of the ship to whom they are supplying the service and should ensure that all assessments cover the entire transfer operation.

3.2.2 Notification

The barge master should inform the Port Manager of movements of the barge within the harbour.

3.2.3 Consultation

The consultation process for the Non-Cargo Liquid Transfer should take place preferably before the ship has arrived in port and before the arrival of the barge alongside the ship. The consultation process should include:

Pre-arrival

The pre-arrival information could be exchanged electronically, over the telephone or on a working VHF channel. The salient information should include:

- Port clearance to come alongside the vessel
- Estimated arrival time (ETA)
- Berthing instructions, port or starboard side alongside
- Quantity of product to be transferred
- Manifold marker to align the position of the barge
- Any other information that may be relevant to the transfer

Arrival

On arrival, the barge master and the ship's officer who is in management control of the operation should meet and discuss the whole transfer operation. They will jointly agree to the transfer operation using a 'Safety Checklist' drawn up by the barge master or the ship's captain or both. A sample of such a checklist is shown in Appendix 3.

Departure

The departure information should include:

- Depressurisation of the system
- Line draining and hose clearance
- Documentation and product sample exchange
- Casting off

The process should also involve the Port Manager (where applicable) who may wish to audit the process on behalf of the port.

Any issues, risks or hazards identified during the consultation process should be resolved by the risk management process as discussed under Section 2 – Risk Management Process.

3.2.4 Maintenance of Hoses

All hoses are to meet regulatory standards and be inspected to comply with pressure and suitability of task and product requirements. The Port Manager is not responsible for the condition of hoses and pipes but may audit the condition and suitability at any time.

Any variations that impede the safety or the security of the transfer process should result in immediate stoppage of the transfer process. The transfer process should only resume when a risk assessment has been undertaken and all issues are satisfactorily resolved.

3.2.5 The Non-Cargo Liquid Transfer Operation

The transfer operation should not start until the conditions of the 'Safety Checklist' have been complied with and jointly endorsed to indicate understanding of and agreement with the terms and conditions of the check list. Any changes to the agreed transfer process must be jointly agreed.

Any variations that impede the safety or the security of the transfer process should result in immediate stoppage of the transfer process. The transfer process should only resume when a risk assessment has been undertaken and all issues are satisfactorily resolved.

Constant communication should be maintained between the ship and barge:

- To confirm starting and stopping transfer operations and emergency stops.
- To confirm transfer rates, pressures and quantities.
- To verify line and tank integrity.
- For Emergency Management.

3.2.6 Stopping of Transfer Operations

The transfer operation should stop:

- If directed by the Port Manager.
- If communication between the ship and barge fails or is unable to be maintained.
- If a leak or spill is detected in the transfer process.
- No appreciable change or movement detected in the receiving tank.
- If there is an emergency on board the ship or barge.

General Requirements (Recognised processes)	
	<p>Some general requirements:</p> <ul style="list-style-type: none"> ▪ Barge must be secured to the ship using approved mooring points ▪ There is safe access between ship and barge ▪ Designated hose party must connect and disconnect the hose ▪ The supplier should have access to an emergency spillage kit with absorbent pads and clean up equipment to deal with any accidental spillage ▪ No ignition sources within 25 metres of any bunker flange and/or vent pipes associated with the transfer operation ▪ Visual watch throughout the entire transfer operation ▪ Ensure all areas are clean and free from any spillage ▪ All incidents must be reported to the Port Authority ▪ Ensure finalisation of paper work

3.3 Requirements of the Road Tanker

3.3.1 Introduction

This section is designed to assist the road tanker when undertaking Non-Cargo Liquid Transfer operations to identify the hazards and assess the risks, thereby putting in place corrective control measures to eliminate or minimise the risk as is reasonably practicable.

The driver of the road tanker or his nominated person, has a duty of care towards their own vehicle, the infrastructure that they will be using to transfer the load, the general public and the environment. The suppliers risk assessment should start from the load/discharge terminal and covering the transportation of the product as well as the load/discharge of the product to or from the ship.

3.3.2 Notification

The ship's agent should inform the terminal security of the arrival of the road tanker.

3.3.3 Consultation

The consultation process between the ship and ship's agent arranging the road tanker delivery/pick-up should take place preferably before the ship has arrived in port and before the arrival of the road tanker at the wharf along side the ship for the Non-Cargo Liquid Transfer. The consultation process should include:

Pre-arrival

The pre-arrival information could be exchanged electronically or over the telephone. The salient information should include:

- Estimated arrival time (ETA)
- Quantity of fuel or cargo to be transferred
- Manifold marker to align the position of the road tanker
- Any other information that may be relevant to the transfer

Arrival

On arrival at the wharf along side the ship, the road tanker driver or the nominated person of the transport company who is in management control of the operation will meet and discuss in depth the whole transfer operation with the appointed ship's officer. They will jointly agree to the transfer operation using a 'Safety Checklist' drawn up by the transporter or the ship's captain or both. A sample of such a checklist is shown in Appendix 4.

Departure

The departure information should include:

- Depressurisation of the system
- Line draining and hose clearance method
- Documentation and product sample exchange

The process should also involve the Port Manager (where applicable) who may wish to audit the process on behalf of the port.

Any issues, risks or hazards identified during the consultation process will be resolved by the Risk Management Process as discussed under Section 2 – Risk Management Process.

3.3.4 Maintenance of Hoses

All hoses are to meet regulatory standards and be inspected to comply with pressure and suitability of task and product requirements. The Port Manager is not responsible for the condition of hoses and pipes but may audit the condition and suitability at any time.

Any variations that impede the safety or the security of the transfer process should result in immediate stoppage of the transfer process. The transfer process should only resume when a risk assessment has been undertaken and all issues are satisfactorily resolved.

3.3.5 The Non-Cargo Liquid Transfer Operation

The transfer operation should not start until the conditions of the 'Safety Checklist' have been complied with and jointly endorsed to indicate understanding of and agreement with the terms and conditions of the check list. Any changes to the agreed transfer process must be jointly agreed.

Any variations that impede the safety or the security of the transfer process should result in immediate stoppage of the transfer process. The transfer process should only resume when a risk assessment has been undertaken and all issues are satisfactorily resolved.

Constant communication should be maintained between the ship and the road tanker driver or his nominated person:

- To confirm starting and stopping transfer operations and emergency stops.
- To confirm transfer rates, pressures and quantities.
- To verify line and tank integrity.
- For Emergency Management.

3.3.6 Stopping of Transfer Operations

The transfer operation should stop:

- If directed by the Port Manager.
- If communication between the ship and the road tanker driver or his appointed person fails or is unable to be maintained.
- If a leak or spill is detected in the transfer process.
- No appreciable change or movement detected in the receiving tank.
- If there is an emergency on board the ship the road tanker.

	<p>General Requirements (Recognised processes)</p> <p>Some general requirements:</p> <ul style="list-style-type: none"> ▪ The road tanker to be legally parked in a designated or allocated area ▪ The road tanker shall not impede other cargo operations in progress ▪ The road tanker shall have its battery system isolated ▪ The road tanker may have its emergency indicators or a flashing light on ▪ The road tanker may have a barricaded area around it ▪ The road tanker should limit its close proximity to drains and ensure measures are in place to prevent egression into drains ▪ The road tanker will comply with legislation for the product it is transporting ▪ A drip tray is in place under hose connection points when required 	
--	--	--

3.4 Requirements for the Shore Pipeline Supplier

3.4.1 Introduction

This section is designed to assist the shore pipeline supplier when undertaking Non-Cargo Liquid Transfer operations to identify the hazards and assess the risks, thereby putting in place corrective control measures to eliminate or minimise the risk as is reasonably practicable.

The pipeline supplier has a duty of care towards their own infrastructure that they will be using to transfer the product, the general public and the environment. The pipeline suppliers risk assessment should start from the load/discharge terminal and should finish at the load/discharge of the product to the ship.

3.4.2 Notification

The ship's agent should inform the ship and the terminal of the shore pipeline transfer arrangements.

3.4.3 Consultation

The consultation process should take place preferably before the ship has arrived in port and before the Non-Cargo Liquid Transfer. The consultation process should include:

Pre-arrival

The pre-arrival information could be exchanged electronically or over the telephone. The salient information should include:

- Estimated arrival time (ETA)
- Quantity of fuel or cargo to be transferred
- Manifold marker to align the position of the ship
- Any other information that may be relevant to the transfer

Arrival

On arrival of the ship at the wharf, the shore officer who is in management control of the shore operation will meet and discuss in depth the whole transfer operation with the appointed ship's officer. They will jointly agree to the transfer operation using a 'Safety Checklist' drawn up by the pipeline supplier or the ship's captain or both. A sample of such a checklist is shown in Appendix 2.

Departure

The departure information should include:

- Depressurisation of the system
- Line draining and hose clearance method
- Documentation and product sample exchange

The process should also involve the Port Manager (where applicable) who may wish to audit the process on behalf of the port.

Any issues, risks or hazards identified during the consultation process will be resolved by the Risk Management Process as discussed under Section 2 – Risk Management Process.

3.4.4 Maintenance of Hoses

All hoses are to meet regulatory standards and be inspected to comply with pressure and suitability of task and product requirements. The Port Manager is not responsible for the condition of hoses and pipes but may audit the condition and suitability at any time.

Any variations that impede the safety or the security of the transfer process should result in immediate stoppage of the transfer process. The transfer process should only resume when a risk assessment has been undertaken and all issues are satisfactorily resolved.

3.4.5 The Non-Cargo Liquid Transfer Operation

The transfer operation should not start until the conditions of the 'Safety Checklist' have been complied with and jointly endorsed to indicate understanding of and agreement with the terms and conditions of the check list. Any changes to the agreed transfer process must be jointly agreed.

Any variations that impede the safety or the security of the transfer process should result in immediate stoppage of the transfer process. The transfer process should only resume when a risk assessment has been undertaken and all issues are satisfactorily resolved.

Constant communication should be maintained between the ship and the shore pipeline supplier:

- To confirm starting and stopping transfer operations and emergency stops.
- To confirm transfer rates, pressures and quantities.
- To verify line and tank integrity.
- For Emergency Management.

3.4.6 Stopping of Transfer Operations

The transfer operation should stop:

- If directed by the Port Manager.
- If communication between the ship and the shore pipeline supplier fails or is unable to be maintained.
- If a leak or spill is detected in the transfer process.
- No appreciable change or movement detected in the receiving tank.
- If there is an emergency on board the ship or shore.

General Requirements (Recognised processes)	
	<p>Some general requirements:</p> <ul style="list-style-type: none"> ▪ The ship should be secured to the wharf using approved mooring points ▪ There is safe access between ship and wharf ▪ A designated hose party should connect and disconnect the hose ▪ The shore pipeline supplier should have access to an emergency spillage kit with absorbent pads and clean up equipment to deal with any accidental spillage ▪ No ignition sources within 25 metres of any bunker flange and/or vent pipes associated with the transfer operation ▪ Visual watch throughout the entire transfer operation ▪ Ensure all areas are clean and free from any spillage ▪ All incidents must be reported to the Port Manager ▪ Ensure finalisation of paper work

4. Documentation

4.1 Notification

Port Managers generally require that all Non-Cargo Liquid Transfer operations are recorded and may be audited for compliance by the Port Managers.

The ship's agent must notify (where applicable) the local Port Manager of the intention to undertake Non-Cargo Liquid Transfer operations and seek any relevant permits.

4.2 Record Keeping

A record of all Non-Cargo Liquid Transfer operations, meetings and risk assessments should be maintained by Ships' Masters, Port Managers and Non-Cargo Liquid suppliers either in electronic format or in a hard copy. Records as a minimum should include:

- Name of ship
- Persons in charge
- Berth
- Location
- Date and time

General Requirements (Recognised processes)	
	<p>Records should also be maintained for:</p> <ul style="list-style-type: none"> ▪ Training (refer to Section 5) ▪ Emergency management (refer to Section 6) ▪ Test Certificates (as required by various jurisdictions) ▪ AMSA Marine Notice 18/2007 (refer to Section 4.4)

4.3 Bunker Suppliers

Ships and bunker suppliers are reminded that MARPOL Annex VI applies in Australia. A bunker delivery note must be supplied to the ship and is to be retained by the ship for three (3) years after fuel delivery. The bunker delivery note must contain the following:

- Name and IMO Number of receiving ship
- Port
- Date of commencement of delivery
- Name, address and telephone number of marine fuel supplier
- Product name(s)
- Quantity (metric tons)
- Density at 15°C, tested in accordance with ISO 3675
- Sulphur content % m/m tested in accordance with ISO 8754
- A declaration signed and certified by the fuel oil supplier's representative that the fuel oil supplied is in conformity with regulation 14(1) or (4)(a) and regulation 18(1) of MARPOL Annex VI

A representative sample of the fuel delivered must be provided to the ship along with the bunker delivery note.

4.4 Register of Local Fuel Oil Suppliers

Bunker suppliers in Australia must be registered with the Australian Maritime Safety Authority (AMSA) from 11 November 2007 to comply with MARPOL Annex VI.

Registration can be made by completing the Local Fuel Oil Suppliers Initial Declaration available on the AMSA web site at <http://www.amsa.gov.au/Forms/AMSA235.dot>

4.5 Representative Fuel Samples

International Maritime Organization Resolution MEPC.96(47) provides Guidelines for the sampling of fuel oil for determination of compliance with Annex VI of MARPOL.

5. Training & Inspection Programs

5.1 Training

Based on the risk assessment and the complexity of the Non-Cargo Liquid Transfer operation, the Officer of the vessel who is responsible for the transfer of Non-Cargo Liquids, the Barge Master and the person in charge of the tanker truck or pipeline operation, should ensure that all staff involved in the Non-Cargo Liquid Transfer operation are provided with a formal training program.

The training should aim to ensure that each person who may be involved with the transfer operation achieves the knowledge and competencies of the operation. The staff must be supervised until they can demonstrate they are competent in handling the operation.

A basic Tanker Safety Course (not relevant for International ships) should be sufficient to cover the theoretical aspect of the transfer operation; however on the job training may suffice. The training should include:

- A basic tanker safety course
- A basic fire fighting course

5.2 Training Outcomes

Ship and shore staff undertaking Non-Cargo Liquid Transfer operations should be:

- Proficient in handling the process.
- Have knowledge of the hazards that may arise from the transfer process.
- Conversant with the material safety data sheets for the product being handled.
- Be able to respond to any emergency and assist till emergency assistance arrives.

5.3 Inspections

All responsible parties involved in the Non-Cargo Liquid Transfer operation should develop and implement a comprehensive inspection program. These inspections should be undertaken regularly and recorded.

Regular inspections can identify faults and potential failures in the system before incidents occur.

The Non-Cargo Liquid Transfer operation may be subject to Port Manager inspections and audits.

6. Spill Containment

6.1 Spill Containment

Any spill during the Non-Cargo Liquid Transfer operation, which is not contained within the drip trays or save all, must be contained on the site. The immediate action is to stop all operations, take corrective action to contain and or reduce the impact and immediately report the spill incident to the Port Manager.

Clean-up operations thereafter will depend on:

- The nature of the product spilt
- The quantity of product spilt
- The potential impact to the immediate area and the surrounding environment.

The port incident coordinator in conjunction with the Master of the ship and other personnel involved in the transfer may jointly agree on clean-up operations.

Oil Spill Response (Recognised processes)	
	<p>Port Managers have in place oil spill response personnel and equipment. They provide advice and equipment such as:</p> <ul style="list-style-type: none"> ▪ Spill kits to clean-up immediate area ▪ Spill booms to contain and limit the area of the spill. ▪ Spill pads and absorbent material to pick up the spilt material ▪ Treatment units for large spills

6.2 Impact of Spills

Measures to prevent or control the impact of a spill will require a risk assessment. The hierarchy of control will need to be employed to suit the containment and clean-up operations.

Spill Impacts
<p>A spill may have an impact on:</p> <ul style="list-style-type: none"> ▪ People in the immediate vicinity of the spill ▪ Infrastructure in the area of the spill ▪ Marine and wild life that come in contact with the spill ▪ Ground water and soil

7. Emergency Actions

Emergency actions dealing with Non-Cargo Liquid Transfer operations may include:

7.1 Emergency Procedures

Emergency procedures are required for handling all unforeseeable emergencies during a Non-Cargo Liquid Transfer operation. Emergency procedures may vary but should include as a minimum:

- Raising of an alarm
- Method of informing Port Managers, government agencies including owners, charterers and their agents
- Action taken by employees to minimise the damage to property and environment
- Action by employees to ensure their own safety and the safety of those around them

7.2 Emergency Plans

The purpose and scope of an emergency plan should be designed to manage and co ordinate all aspects of the emergency. Emergency plans should include:

- Responsibilities of key personnel
- Circumstances and systems to activate the plan
- Outline teams and roles to handle various aspects of the emergency
- Additional resources such as emergency services, additional power

7.3 Emergency Equipment

Equipment required to be on hand to contain and or clean up a spill should include:

- Pumps and hoses for removing the spilled material
- Drums and containers for handling the spilled material
- Hand tools, mops, buckets, squeegees and bins
- Absorbent material such as pads, sawdust and kitty litter
- Protective clothing to protect the health and safety involved in the spill

Spill Dispersants

For oil spills, a spill dispersant may be part of the emergency equipment. However, the use of spill dispersants must be approved by the Port Managers.

The use of oil spill dispersants should be discussed and agreed in the checklist before any fuel bunkering operation.

Appendix 1

Sample – Non-Cargo Liquid Notification Form

NOTIFICATION TO CONDUCT NON-CARGO LIQUID TRANSFER OPERATIONS IN THE PORT OF _____

Non-Cargo Liquid Transfer Information

I, the undersigned, wish to Conduct Non-Cargo Liquid Transfer Operations* as follows:-

Barge	Tonnes of:
Road Tanker	Tonnes of:
Other	

<p><u>Ship Visit details</u></p> <p>Vessel: _____</p> <p>Proposed Berth: _____</p> <p>Proposed Date: _____</p> <p>Print Name: _____</p>	<p><u>Agent Contact Details</u></p> <p>Agent: _____</p> <p style="text-align: right;">Principal/Sub</p> <hr/> <p>Address</p> <p>_____</p> <hr/> <p>Telephone: _____</p> <hr/> <p>Fax: _____</p> <hr/> <p>Signed _____ Date _____</p>
---	---

For Office use only

This signed or stamped notification Form shall be evidence of the designated port officer's permission to conduct Non-Cargo Liquid Transfer operations in the Port of _____

<p>Designated Port Officer:</p> <p>Signed: _____</p> <p>Date: _____</p> <p>Time: _____</p> <p>Comments: _____</p>	<p>* Note: Non-Cargo Liquid Transfer operations are subject to Port inspection. It is the responsibility of the vessel's Master to notify the Port Inspector. Inspections are to be arranged one (1) hour prior to the start of transfer operations by contacting _____</p> <p>Ph: _____</p> <p>Permit No: <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 20px;"> </td> <td style="width: 20px; height: 20px;"> </td> <td style="width: 20px; height: 20px;"> </td> <td style="width: 20px; height: 20px;"> </td> </tr> </table></p>				

Appendix 2

Sample – Ship/Shore Safety Checklist

Name Of Vessel _____	Berth _____
Agent _____	Start Date/Time _____
_____	Finish Date/Time _____

Ship Requirements		
What products are being transferred?		
What is the quantity?		
Is there sufficient ullage in the vessel's tank/s to hold the volume of product to be delivered?	YES	NO
Are all scuppers and other deck openings securely plugged or sealed?	YES	NO
Is there an empty, plugged save all or drip tray under the manifold connection?	YES	NO
Are all hoses		
▪ In good condition	YES	NO
▪ In Test	YES	NO
▪ Properly rigged	YES	NO
▪ Of sufficient length to allow for movement of the ship	YES	NO
Is there an effective means of communication between the ship and barge/road tanker, shore pipeline supplier?	YES	NO
Is there an effective deck watch in attendance on board and adequate supervision on the Barge/road tanker/shore?	YES	NO
Is the ship displaying "No Smoking/No Naked Flame" signage?	YES	NO
Are "No Smoking/No Naked Flame" regulations being observed?	YES	NO
Have the procedures for bunker handling with barge/road tanker/shore been agreed?	YES	NO
Are fire fighting and oil response equipment in position and ready for use?	YES	NO
Have the use of oil spill dispersants been agreed?	YES	NO
Are unused pipeline connections properly secured with blank flanges fully bolted?	YES	NO
Is the pipeline connection sealed, fully bolted and leak free at the start of operations	YES	NO

Remarks / Comments

Signature of Ship's Officer

Signature of Shore Supplier/Receiver

Appendix 3

Sample – Barge Safety Checklist

Barge Requirements		
Is the barge securely moored?	YES	NO
Are all hoses		
▪ In good condition	YES	NO
▪ In Test	YES	NO
▪ Properly rigged	YES	NO
▪ Of sufficient length to allow for movement of the ship	YES	NO
Is there an empty, plugged save all or drip tray under the manifold connection?	YES	NO
Is there an effective means of communication between the ship and barge?	YES	NO
Is a barge representative located at the product bunkering point?	YES	NO
Is the barge displaying “No Smoking/No Naked Flame” signage?	YES	NO
Are “No Smoking/No Naked Flame” regulations being observed?	YES	NO
Are unused pipeline connections properly secured with blank flanges fully bolted?	YES	NO
Is the pipeline connection sealed, fully bolted and leak free at the start of operations?	YES	NO
Are fire fighting and oil response equipment in position and ready for use?	YES	NO
Have the use of oil spill dispersants been agreed?	YES	NO

Remarks / Comments

Signature of Barge Representative

Signature of Ship's Officer

Appendix 4

Sample – Road Tanker Safety Checklist

Road Tanker Requirements		
Are drip trays located under the hose connections?	YES	NO
Are drip trays located under the road tanker manifold?	YES	NO
Are all hoses		
▪ In good condition	YES	NO
▪ In Test	YES	NO
▪ Properly rigged	YES	NO
▪ Of sufficient length to allow for movement of the ship	YES	NO
Are camlock hose fittings locked closed and secured?	YES	NO
Is there an effective means of communication between the ship and road tanker?	YES	NO
Are hoses spanning the water continuous with no connections?	YES	NO
Is there a responsible person/driver near the road tanker at all times?	YES	NO
Is the area around the road tanker cordoned off?	YES	NO
Is the road tanker displaying “No Smoking”/“No Naked Flame” signage?	YES	NO
Are fire fighting and oil response equipment in position and ready for use?	YES	NO
Have the use of oil spill dispersants been agreed?	YES	NO

Remarks / Comments <hr/> <hr/> <hr/>

Signature of Tanker Representative

Signature of Ship's Officer

Appendix 5

References and Sources of Information

- AS 3846 – 2003 The Storage and Handling of Dangerous Cargoes in Port Areas
- AS 4360 – 2004 Risk Management
- HB 436 – 2004 Risk Management Guidelines
- HB 139 – 2005 Guidelines on Integrating & Requirements of Quality, Environmental, Health & Safety Management Systems
- ISO 9000 Quality Management Systems
- ISO 14000 Environmental Management Systems
- ISO 3675 Crude petroleum and liquid petroleum products -- Laboratory determination of density -- Hydrometer method
- ISO 8754 Petroleum products -- Determination of Sulfur Content -- Energy-dispersive X-ray fluorescence spectrometry
- IMO Resolution MEPC.96(47) Guidelines for the sampling of fuel oil for determination of compliance
- International Ship Management (ISM) Code
- International Safety Guide on Oil Tankers & Terminals (ISGOTT)
- International Bulk Carrier (IBC) Code
- MARPOL: the International Convention on Prevention of Pollution from Ships 1973 as modified by the Protocol of 1978 relating thereto, and the Protocol of 1997 (Prevention of Air Pollution from Ships)
- Protection of the Sea (Prevention of Pollution from Ships) Act 1983 (Commonwealth)
- Environment Protection Act 1970 (Victoria)
- WorkSafe Victoria – Safe Handling of Industrial Waste
- WorkSafe Victoria – Non Hazardous Waste and Recyclable Materials

Disclaimer

This is a proprietary Ports Australia document. Ports Australia accepts no liability for any reliance by any third party on the procedures detailed in this document.

Distribution

Electronic copies of this document are available on the Ports Australia website - www.aapma.org.au or www.portsaustralia.com.au

Acknowledgement

Ports Australia acknowledges the considerable assistance of Bill Johnson from the Port of Melbourne Corporation in the writing and development of this document.

© Ports Australia 2007

Level 16, 1 York Street, Sydney NSW 2000 Australia. Tel (02) 9247 7581 Fax (02) 9247 7585.