

LNG BUNKERING

CODE OF PRACTICE

2017



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Liquefied Natural Gas Bunkering Code of Practice 2017

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Peel Ports London Medway's LNG Bunker Checklist

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Section 1

1. Introduction

- 1.1. This Code of Practice covers the purpose, definitions, use, accountability and monitoring of LNG bunkering procedures within Peel Ports London Medway's area of jurisdiction. It is compiled from a number of sources demonstrating best practice within the industry.
- 1.2. This Code of Practice is the property of
- Peel Ports London Medway**
Sheerness Docks
Sheerness
Kent
ME12 1RS
- 1.3. The procedures set out in this Code of Practice cover LNG bunkering operations by Road Tanker (Bowser).
- 1.4. The Peel Ports London Medway Marine Department shall monitor compliance with the procedures set out in this Code of Practice.

2. Purpose

- 2.1. The purpose of the procedures are:
- To minimise the risks of an incident that could have a detrimental effect on personnel or the environment during the transfer of LNG, other than as cargo, in bulk.
 - To ensure that best practice is applied to the transfer of such liquids.
 - To ensure compliance with the requirements of the Port Marine Safety Code.
- 2.2. The system will provide:
- Peel Ports London Medway with a code for LNG bunkering operations that will enhance the operations of the port.
 - Suppliers of LNG bunkering services with a system to mitigate disputes and problems.
 - Stakeholders with the reassurance that the risk to the public and the environment is kept to as low as is reasonably practical.

3. Definitions

- **Bunkering** Refers to the transfer of any Oil, Noxious or Polluting liquid, either to or from a vessel, by ship, barge, bowser lorry, railway wagon or any other method.
- **LNG** Refers to Liquefied Natural Gas.
- **Road Tanker** In this context shall mean any vehicle specifically designed for the transport and delivery of LNG, either by towing a fixed tanker trailer or a trailer with a tank container or a composite tanker or any other combination.
- **Terminal** In this context means any berth owner, operator or any organization responsible for the location where the LNG bunkering is taking place.
- **Vessel** In this context means any type of ship, boat or tug.
- **Vessel's master** Shall refer to the person in overall charge or command of the vessel.

4. Responsibility

- 4.1. The Master (or Skipper) of any reporting vessel involved in LNG bunkering, the Officer in Charge of the operations and, where appropriate, the road tanker operator and the berth or terminal operators are responsible for compliance with these procedures.
- 4.2. Peel Ports London Medway is responsible for the promulgation and updating of this Code of Practice and with managing the compliance with the procedures.

5. Changes to the Code of Practice

- 5.1. This Code of Practice will be subject to periodic review to ensure that it reflects best practice and responds to changes in industry standards and legislation. Peel Ports London Medway welcomes input from interested parties and from the wider range of river users.

6. Availability

- 6.1. The Port Community and Users will have access to copies of this Code of Practice either by application to Peel Ports London Medway or from the Peel Ports' Website.

7. Assessment of the Procedures and Code of Practice

- 7.1. Peel Ports London Medway's Marine Management team will monitor compliance with the procedures and the implementation of the Code of Practice.
- 7.2. The Peel Ports London Medway's Marine Department reserve the right to conduct random inspections to monitor the effectiveness of the procedures within the code.

8. Breaches of the Code

- 8.1. The Senior Manager, Marine Operations has prime responsibility for the Code of Practice. This responsibility includes ensuring that breaches are investigated and resolved.

9. Checklists

- 9.1. A Peel Ports London Medway LNG Bunker Checklist shall be completed, signed by all parties and a copies of each section sent to Medway VTS (by email to medwayinfo@peelports.com) as required at each stage of the LNG bunker transfer operation. The checklist shall remain available aboard the vessel for inspection throughout the operation and for 14 days after completion.

10. Berth Risk Assessment

- 10.1. A risk assessment shall be carried out by the berth operator prior to authorising a bunker operation, whenever cargo operations are taking place simultaneously.

11. Road Tanker (Bowser) Operations (including delivery by rail tanker)

- 11.1. It is the responsibility of the receiving vessel to ensure that any road vehicle delivering LNG bunkers is suitably fit for purpose and operates to the procedures set out in this Code of Practice.

12. Bunker Disputes

Peel Ports London Medway does not either supply or facilitate the supply of LNG bunkers. All such operations within Peel Ports London Medway's area of jurisdiction are carried out by third parties. Peel Ports London Medway will have no involvement in any dispute between these parties.

Section 2

Peel Ports London Medway LNG Bunkering Procedures

GENERAL

The responsibility for the safe conduct of LNG bunkering operations are shared jointly by the vessel's master, the LNG road tanker operator and, if applicable, the berth operator or terminal representative. Before the LNG bunker operations commence, the vessel's master, the LNG road tanker operator and, if applicable, the terminal representative should

- Agree in writing on the transfer procedures, including the maximum loading or unloading rates
- Agree in writing on the action to be taken in the event of an emergency
- Complete and sign the Peel Ports London Medway LNG bunker checklist.

STRUCTURE OF THE CHECKLIST

The Peel Ports London Medway LNG Bunker Checklist is comprised of four sections.

SECTION 1 - Planning Stage Checklist

Section 1 should be completed at the time bunkers are being ordered. The checklist is completed by the vessel in consultation with the terminal and the bunker supplier. When the form is completed a copy is to be sent to medwayinfo@peelports.com

This part concerns the considerations to be made during the planning stage of LNG bunker operations, and can be used as a guide for the exchange of knowledge and agreements on safety items required during the planning stage for LNG bunkering.

SECTION 2 - LNG Transfer Data

This section should be completed on arrival at the berth when contact has been made with the road tanker operator and the terminal. It includes details of the bunkers to be transferred and tanks, rates, temperatures and pressures that will be agreed on.

When the form is completed a copy is to be sent to medwayinfo@peelports.com

SECTION 3 – This section should be completed immediately prior to commencing transfer of LNG bunkers.

This section is the Pre Transfer Checklist and it identifies the required physical checks and elements that are to be verified before the LNG bunkering commences. The checklist that contains all relevant items that need to be checked and the associated responsibility and accountability for compliance accepted, either jointly or singly.

Where either party is not prepared to complete an item a comment must be made in the remarks column and due consideration should be given to assessing whether the operations can proceed.

Where a particular item is considered to be not applicable to the vessel, the LNG road tanker or to the planned operation, a note to this effect should be entered in the 'Remarks' column.

When the form is completed a copy is to be sent to medwayinfo@peelports.com

SECTION 4 – This section should be completed immediately after completion of all LNG bunker operations.

This section confirms the completion of LNG bunkering operations and the safe disconnection of the bunker connections.

When the form is completed a copy is to be sent to medwayinfo@peelports.com

Completing Peel Ports London Medway LNG Bunker Checklist

The following guidelines have been produced to assist in the completion of the LNG Bunker Checklist

The vessel's master and all under his command must adhere to the requirements of the checklist throughout the vessel's stay alongside. The LNG road tanker operator and, if applicable, the terminal representative must ensure that the road tanker personnel and, if applicable, shore personnel do likewise. Each party commits to co-operate fully in the mutual interest of achieving a safe and efficient operation.

The vessel's master can designate a responsible person to be in charge of bunkering operations and authorize them to complete and sign the LNG bunker checklist.

The acceptance of responsibility is confirmed by ticking or initialling the appropriate box and finally signing the declaration at the end of the checklist. Once signed, this confirms the minimum requirements for safe operations has been agreed upon.

Some of the checklist items are directed to issues for which the vessel has sole responsibility and some are either for the LNG road tanker or terminal. Some checklist statements assign a joint responsibility. Shaded boxes are used to identify statements that generally may not be applicable to one party, although the vessel, tanker or terminal may tick or initial such sections if they so wish.

Each party only checks and signs for their own responsibilities

The assignment of responsibility does not mean that the other party is excluded from carrying out checks in order to confirm compliance. It is intended to ensure clear identification of the party responsible for initial and continued compliance throughout the vessel's stay at the bunker location.

The vessel's master should personally check all considerations lying within the responsibility of the LNG fuelled vessel. Similarly, all considerations which are the LNG road tanker or, if applicable, the terminal's responsibility should be personally checked by the LNG road tanker operator or, if applicable, the terminal representative. In fulfilling these responsibilities, representatives should assure themselves that the standards of safety on both sides of the operation are fully acceptable.

This can be achieved by means such as

- Confirming that a competent person has satisfactorily completed the checklist
- Sighting appropriate records
- By joint inspection, where deemed appropriate

Before the start of operations, and from time to time thereafter, the LNG road tanker operator, terminal's staff and a responsible vessel's officer, should conduct inspections of the vessel, road tanker and surrounding area to ensure that the operation is continuing in a safe manner. The time of these inspections should be recorded.

If at any time the operation is not in compliance with this Code of Practice, either party may require that the LNG bunker operations are stopped until corrective action is taken.

The presence of the letters A, R or P in the column entitled 'Code' indicates:

- | | | |
|---|---|---|
| A | - | Agreement - This indicates an agreement by two or more of the parties involved. |
| R | - | Re-check - This indicates items to be re-checked at appropriate intervals as stated in the declaration. |
| P | - | Permission - This indicates that permission is required from Peel Ports London Medway. |

Annex 1 – Peel Ports London Medway LNG Bunkering Checklist

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Section 1 - This part of the checklist should be completed prior to arrival, at the planning stage of an LNG bunker operation. When the form is completed a copy is to be sent to medwayinfo@peelports.com

Planned Date and Time	
Designated LNG Bunker Location	
LNG Receiving Vessel	
LNG Supplying Road Tanker	
Planned Quantity to be Loaded	

	Check	Vessel	Road Tanker	Terminal	Code	Remarks
1.1	Has Peel Ports London Medway granted permission for LNG bunker transfer operations to take place at the specific location and time?				P	
1.2	Has the berth owner/operator granted permission for LNG bunker transfer operations for the specific location and time?				P	
1.3	Are Peel Port Medway’s LNG Bunkering Code of Practice requirements being observed?					
1.4	Have all personnel involved had appropriate training and been instructed on the specific LNG bunker equipment and procedures to be used?.					
1.5	Is the bunker location accessible for the LNG road tanker and is the total weight of the road tanker within the maximum permitted load of the quay?					
1.6	Is the bunker operation area sufficiently illuminated?					
1.7	Are all LNG transfer and gas detection equipment certified, in good condition and appropriate for the service intended?					
1.8	Have the procedures for bunkering, cooling down and purging operations been agreed upon?				A	
1.9	Has a restricted area (Safety Zone) on the shore been agreed upon by vessel, road tanker and terminal? (min 50 metres)					Safety zone ____m (Minimum 50m)
1.10	All Peel Ports London Medway required firefighting equipment is ready for immediate use.					

Details of Responsible Persons

For Vessel	For LNG Road Tanker	For Berth/Terminal
Name	Name	Name
Rank	Position	Position

Section 2 - LNG Transfer Data - This part of the checklist should be completed on arrival at the berth, before commencing transfer operations. When the form is completed a copy is to be sent to medwayinfo@peelports.com

Planned Date and Time	
Designated LNG Bunker Location	
LNG Receiving Vessel	
LNG Supplying Road Tanker	
Planned Quantity to be Loaded	

Record here the agreed starting temperatures, pressures and Physical Quantity Unit (PQU) (in m³/Tonnes)

	Vessel		Road Tanker		Unit
LNG tank: start temperature:					
LNG tank: start pressure:					
LNG tank: available (rest) capacity					

Record here the agreed LNG bunker operations

	Tank 1	Tank 2	Unit
Agreed quantity to be transferred:			
Starting pressure at the manifold:			
Starting rate:			
Max transfer rate:			
Topping up rate:			
Max pressure at manifold:			

Record here the agreed maximums and minimums

	Maximum	Minimum	Unit
Pressures during bunkering:			
Pressures in the LNG bunker tanks:			
Temperatures of the LNG:			
Filling limit of the LNG bunker tanks:			

Details of Responsible Persons

For Vessel	For LNG Road Tanker	For Berth/Terminal
Name	Name	Name
Rank	Position	Position

Section 3 – This section should be completed immediately prior to commencing transfer of LNG bunkers. When the form is completed a copy is to be sent to medwayinfo@peelports.com

Planned date and time:	
Designated LNG bunker location	
LNG receiving vessel	
LNG Supplying Road Tanker	
Planned Quantity to be Loaded	

	Check	Vessel	Road Tanker	Terminal	Code	Remarks
3.1	Have Sections 1 and 2 of this Check List been completed, all items complied with and copies sent to medwayinfo@peelports.com ?					
3.2	Are present weather and wave conditions within the agreed limits?				A R	
3.3	Is the vessel securely moored with adequate fendering in place?				R	
3.4	Is there safe access to and from the vessel?				R	
3.5	Is all firefighting equipment in place and ready for use?				R	
3.6	Is the bunker operation area sufficiently illuminated?				A R	
3.7	Are the regulations with regards to ignition sources being observed? (Including within the vessel's accommodation and machinery spaces, upon open decks and in the buildings on the berth)?				A R	
3.8	Are both the vessel and road tanker able to move under their own power and is there an agreed emergency departure plan?				A R	
3.9	Is there adequate supervision in place, both for the vessel and the LNG road tanker, and is an effective watch being kept at all times?				R	
3.10	Has an effective means of communication between the vessel and the LNG road tanker been established and tested? Has the communication language has been agreed upon?				A R	Radio Channel: Language:
3.11	Have all emergency stop signals and shutdown procedures been agreed and tested?				A	Emergency Stop Signal:
3.12	Has the required Restricted Area (Safety Zone) been established and signs placed to mark the area.				A R	
3.13	Is the Restricted Area free of unauthorized persons, objects and sources of ignition				A R	
3.14	Have cargo and maintenance operations ceased within the Restricted Area?				A R	

	Check	Vessel	LNG Road Tanker	Terminal	Code	Remarks
3.15	Has the system and method of electrical insulation been agreed by both the vessel and road tanker?				A	Method:
3.16	Are all external doors, ports and accommodation vents aboard the vessel closed?				R	At no time should they be locked
3.17	Are all emergency procedures, plans and contact details known to the persons in charge?				A	
3.18	Has the gas detection equipment been fully tested and found to be in good working order?					
3.19	Are Material Safety Data Sheets (MSDS) for the delivered LNG fuel available?				A	
3.20	Is there sufficient suitable protective clothing and equipment ready for immediate use?					
3.21	Are all personnel involved in, or in the area of, the connection and disconnection of hoses wearing appropriate protective clothing and equipment?					
3.22	Is a powered emergency release coupling installed and ready for immediate use?					If applicable
3.23	Has the water spray system been tested and is it ready for immediate use?					If applicable.
3.24	Are spill containment arrangements appropriate, in position, empty and of sufficient size?					
3.25	Is hull and deck protection against low temperature in place?					If applicable.
3.26	Are bunker pumps and compressors in good working order?				A	If applicable.
3.27	Are all control valves well maintained and in good working order?					
3.28	Are all bunker system gauges, high level alarms and high-pressure alarms operational, correctly set and in good working order?					
3.29	Are the vessel's bunker tanks protected against inadvertent overfilling at all times, is the tank content being constantly monitored and are alarms correctly set?				R	
3.30	Have all safety and control devices been checked, tested and found to be in good working order?					
3.31	Is pressure control equipment and boil off or re-liquefaction equipment operational and in good working order?					If applicable
3.32	Have both the vessel's and the road tanker's ESDs, automatic valves or similar devices been tested and found in good working order and are both ESD systems linked?				A	
3.33	Have the closing rates of the ESDs been exchanged?					ESD Vessel seconds ____ ESD Tanker seconds ____

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	Check	Vessel	LNG Road Tanker	Terminal	Code	Remarks
3.34	Has the initial LNG bunker line up been checked and are all unused connections closed, blanked and fully bolted?					
3.35	Are all LNG bunker hoses, fixed pipelines and manifolds in good condition, properly rigged, supported, connected, tested and certified for LNG?					
3.36	Is the LNG bunker connection between the vessel and the road tanker provided with dry disconnection couplings?					If applicable.
3.37	Has the LNG bunker connection, between the vessel and the LNG road tanker, adequate electrical insulation means in place?					
3.38	Are dry breakaway couplings place? Have they been visually inspected for function and found to be in a good working order.				A	
3.39	Is the road tanker electrically grounded and are the wheels are chocked?					
3.40	Is the road tanker’s engine switched off during the connection and disconnection of the LNG bunker hoses?					
3.41	Is the road tanker’s engine switched off during purging or LNG transfer (Unless the engine is required for the purging or transfer of LNG)?					
3.42	Are the vessel’s emergency fire control plans located externally where they can be accessed in an emergency?					Location:
3.43	Is an International Shore Connection is available?					If applicable
3.44	Has Medway VTS been informed that bunker transfer operations are commencing.				P	Date /time of the notification

Declaration

We, the undersigned, have checked the above items in accordance with the Peel Ports London Medway LNG Bunkering Code of Practice and have satisfied ourselves that the entries we have made are correct.

We have also made arrangements to carry out repetitive checks as necessary and agreed that those items coded ‘R’ in the checklist should be re-checked at intervals not exceeding ____ hours.

If, to our knowledge, the status of any item changes, we will immediately inform the all parties, **including Medway VTS.**

For Vessel	For LNG Road Tanker	For Terminal
Name	Name	Name
Rank	Position	Position
Signature	Signature	Signature
Date	Date	Date
Time	Time	Time

Section 4 – This section should be completed immediately after completion of all LNG bunker operations. When the form is completed a copy is to be sent to medwayinfo@peelports.com

Record of Repetitive Checks								
Date								
Time								
Initials for vessel								
Initials for bowser								
Initials for terminal								

	Check	Vessel	LNG Road Tanker	Terminal	Code	Remarks
4.1	Have all LNG bunker hoses, fixed pipelines and manifolds been properly purged prior to disconnection?				A	
4.2	Have all remote and manually controlled valves been properly closed prior to disconnection?				A	
4.3	After disconnection, has the Restricted Area been deactivated and the signs been removed?				A	
4.4	Has Medway VTS been notified that all LNG bunkering operations have been completed?					Date/time of notification
4.5	Have the berth operators been notified that all LNG bunkering operations have been completed?					Date/time of notification
4.6	If applicable have any near misses and/or incidents been reported to Medway VTS?					Report nr:

Declaration

We, the undersigned, have checked the above items in accordance with Peel Ports London Medway’s LNG Bunkering Code of Practice and have satisfied ourselves that the entries we have made are correct.

For Vessel	For LNG Road Tanker	For Terminal
Name	Name	Name
Rank	Position	Position
Signature	Signature	Signature
Date	Date	Date
Time	Time	Time

Guide for completing this checklist (see also Peel Ports London Medway’s LNG Bunkering Code of Practice)

The presence of the letters ‘A’ , ‘R’ or ‘P’ in the column entitled ‘Code’ indicates:

A - Agreement

This indicates an agreement by two or more of the parties involved.

R - Re-check

This indicates items to be re-checked at appropriate intervals as stated in the declaration.

P - Permission

This indicates that permission is required from Peel Ports London Medway.

The joint declaration should not be signed until each party has checked their relevant items within the section, This document is to be kept on board of the LNG receiving vessel for at least 14 days after the end of the operation and is to be made available on request to an officer of Peel Ports London Medway.

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