
SHIP SHORE INTERFACE PLAN AND COMPATIBILITY

REGASIFICADORA DEL NOROESTE, S.A.

MUGARDOS

A CORUÑA

**SHIP SHORE INTERFACE PLAN AND COMPATIBILITY
MUGARDOS LNG TERMINAL**



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1. OBJECT

The purpose of this document is limited to the information that should be exchanged between Vessel and Terminal, needed for safe berthing, unloading/gassing-up/cool down/loading and unberthing of an LNG vessel at REGANOSA Terminal.

2. SCOPE

The scope of this Technical Note covers all the pertinent proceedings and actions performed by REGANOSA's Terminal and the Vessel as long they are related to the execution, prior, during and ending reception, main execution and finalization of the contracted jobs.

3. GTE SHIP'S APPROVAL PROCEDURE

The compatibility study and the final approval for the reception of the LNG vessel at *LNG Terminal Jetty*, must be in accordance with the GTE Ship Approval Procedure (issued June 29th, 2004).

Documents listed hereunder will be exchanged between the Terminal Operator and Shipper or Vessel representatives prior to compatibility meeting. If any mandatory document according with Spanish Norm is not available, it could result as a non acceptance of the vessel.

4. PRELIMINARY INFORMATION EXCHANGE

4.1. Information from Terminal Operator to Vessel Representatives

- ✓ Terminal Information for Gas Carriers
 - Data for OPTIMOOR study
 - General mooring arrangement
 - Mooring configuration
 - Ship-Shore configuration link
 - Short Distance Pieces configuration
- ✓ Ship/Shore safety check list
- ✓ Shipper should retrieve port information related to the marine aspects for port access and berthing directly from Port Authorities

4.2. Information from Vessel Representatives to Terminal Operator

- ✓ Ship/Shore interface plan according to SIGTTO paper No. 5 "Communication necessary for matching ship to berth" if available (new ships), otherwise general arrangement drawing, plus manifold drawing (connecting) and fore and aft deck drawing (mooring equipment)
- ✓ Ship questionnaire duly filled according to SIGTTO form "Ship questionnaire for gas carrier" 1998, 2nd edition
- ✓ Certification of gauge tables and Custody Transfer Measurement¹

¹ Custody Transfer Measurement system specifications and methods shall comply with the GIIGNL LNG custody transfer handbook recommendations



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- ✓ Ship Operational and Safety Procedures while alongside: These procedures concerning mooring, cargo transfer and fire fighting pertain to ISM code. They complete the SSSP for the ship side according to IMO checklist
- ✓ Survey Status Report Issued by Classification Society
- ✓ Vetting²
- ✓ Latest Report of Classification Society³
- ✓ Port State Control Report of Inspection
- ✓ Vessel Insurance document (P&I Club membership)
- ✓ Last 10 Ports visited
- ✓ Certificate of Classification
- ✓ International Ship Security Certificate (ISPS Code)
- ✓ Safety Equipment Certificate (SOLAS)
- ✓ Safety Management Certificate (ISM Code)
- ✓ International Oil Pollution Prevention Certificate (MARPOL)
- ✓ Certificate of Fitness (gas) IMO (IGC Code)
- ✓ CAP⁴
- ✓ Vessel Particular Questionnaire (VPQ)
- ✓ FORM B
- ✓ FORM C
- ✓ Statement of sister vessels (if applicable)
- ✓ BOG flowmeter (and associated instrumentation) calibration certificate and certificate of digital conversion system
- ✓ Tanks cool down tables and nozzle tables
- ✓

5. MOORING ARRANGEMENT

The LNGC shall provide a suitable mooring lay-out and calculation note based on the OCIMF recommendations in its publication "*Mooring Equipment Guidelines, 3rd edition 2008*". The standard environmental input data for the calculation note will be as follows:

- **60 knots wind from any direction simultaneously with:**
 - a) **3 knots current at 0° or 180°**
or
 - b) **2 knots current at 10° or 170°**
or
 - c) **0.75 knots current from the direction of maximum beam current loading**

² According with Spanish Norm, vetting acceptance will be valid 18 months for vessels up to 5 years old, for vessels from 5 to 15 years old 12 months and for vessel older than 15 years 6 months

³ For vessels over 15 years old, class inspection at dry dock during latest 36 months is mandatory

⁴ For vessels over 20 years old; CAP level 2 or higher



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The LNGC shall be moored as shown in the drawing in [Appendix 1 General Mooring Arrangement](#) As approved by Ferrol Port Authority, the following minimum basic requirements are applicable:

< 90.000 m ³	≥ 12 lines
> 90.000 m ³	≥ 14 lines
> 145.000 m ³	≥ 18 lines

- ✓ Only portside berthing is allowed

6. MESSAGE ONCE VESSEL IS DESIGNED TO ARRIVE AT REGANOSA'S TERMINAL

In general, as soon as possible after the vessel has been designated to go to REGANOSA's terminal for any operation, the information indicated below must be sent. (In case of unloading, this information should be forwarded once the vessel leaves the loading port).

General for All Operations

- ✓ Vessel name
- ✓ Cargo number
- ✓ Call Sign
- ✓ Gross tonnage
- ✓ Receiving facility/ETA PBS (Pilot Boarding Station): (DD/MM/YY HH:MM)⁵
- ✓ Estimated mooring time at REGANOSA terminal: (DD/MM/YY HH:MM)
- ✓ Estimated draught on arrival at Mugardos in meters (m)
- ✓ Average tanks gauge pressure in the last 24 hours (mbarg)
- ✓ Provisioning operations at receiving facilities
- ✓ Relevant information (e.g. garbage, LNI provisioning)
- ✓ Vessel's ISPS security level
- ✓

Specific for Unloading

- ✓ Date and time of departure: (DD/MM/YY HH:MM)
- ✓ LNG quantity loaded in cubic meters (m³)
- ✓ Estimated LNG quantity to be unloaded in cubic meters (m³)
- ✓ LNG quantity in mT
- ✓ Draught after loading in meters (m)
- ✓ Vessel required to heel out (yes or no)

⁵ All times should be Terminal Local Time



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- ✓ LNG average temperature in degrees Celsius (°C)
- ✓ Quality Certificate (in this certificate following information is mandatory)

Component:	Mole (%)
METHANE	
ETHANE	
PROPANE	
I-BUTANE	
N-BUTANE	
I-PENTANE	
N-PENTANE	
N-HEXANE	
NITROGEN	

Temperature	°C
GNL Density	kg/m ³
Masic Gross Heating Value (0/0°C, 1 atm)	kWh/kg
Volumetric Gross Heating Value (0/0°C, 1atm)	kWh/m ³

- ✓ Quantity Certificate
- ✓ Bill of Lading
- ✓ Certificate of Origin
- ✓ Impurities in milligrams per normal cubic meter (mg/Nm³)
- ✓ Hydrogen Sulphide
- ✓ Mercaptans (S from RSH)
- ✓ Carbonyl Sulphide plus Hydrogen Sulphide
- ✓ Total sulphur
- ✓ Mercury
- ✓ Carbon dioxide
- ✓

Specific for Gassing-Up

- ✓ Tanks for gassing-up operation
- ✓ Composition of inert gas
- ✓ Estimated time for gassing-up

Specific for Cool Down

- ✓ Tanks for cool down operation
- ✓ Temperature of each tank
- ✓ Estimated time for cool down



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Specific for Loading

- ✓ Quality Certificate of latest cargo operation
- ✓ Estimated LNG quantity remaining on board at REGANOSA's terminal in each tank
- ✓ Temperature of each tank in the last 24h
- ✓ Estimated LNG quantity to be load
- ✓ Tanks for loading operation

7. ESTIMATED TIME OF ARRIVAL (E.T.A.)

The LNGC Master (or in his absence, the Vessel's Agent) is responsible for sending the following notifications to REGANOSA's Terminal.

NOTIFICATION	INFORMATION TO BE FORWARDED
Second notification. 7 days before E.T.A. (In case that E.T.A. has been modified in more than 12 hours, it has to be notified immediately)	E.T.A. at PBS (DD/MM/YY) Position of LNG Vessel ISPS Security Level of LNG Vessel About LNG cargo: <ul style="list-style-type: none">✓ Average temperature (°C)✓ Average vapor pressure (mbarg)
Third notification. 72 hours before E.T.A. (In case that E.T.A. has been modified in more than 6 hours, it has to be notified immediately)	Crew list Ship pre-arrival security information form: with last 10 ports and ISPS Security Level E.T.A. at PBS (DD/MM/YY) Position of LNG Vessel About LNG cargo: <ul style="list-style-type: none">✓ Average temperature (°C)✓ Average vapour pressure (mbarg)
Fourth notification. 48 hours before E.T.A. (In case that E.T.A. has been modified in more than 6 hours, it has to be notified immediately)	E.T.A. at PBS (DD/MM/YY) Position of LNG Vessel ISPS Security Level of LNG Vessel About LNG cargo: <ul style="list-style-type: none">✓ Average temperature (°C)✓ Average vapour pressure (mbarg)
Fifth notification. 24 hours before E.T.A. (In case that E.T.A. has been modified in more than 1 hour, it has to be notified immediately)	E.T.A. at PBS (DD/MM/YY) Position of LNG Vessel ISPS Security Level of LNG Vessel About LNG cargo:



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- ✓ Average temperature (°C)
- ✓ Average vapour pressure (mbarg)

In the same way, LNG Vessel has to report to Port Authorities and to Harbour Master the estimated time of arrival, 72h, 24h, 6h and 2h prior to arrival at pilot boarding station.

8. NOTICE OF READINESS

Notice of Readiness (N.O.R.) document must be reported by LNGC Master to LNG Terminal.

9. BERTHING OF THE LNGC

See: [Appendix 1 General Mooring Arrangement](#).

See also the safety norms at www.apfsc.com

10. CHANGES OF OPERATING PRACTICES

All changes in operating practices on board and/or at the Terminal affecting the unloading/gassing-up/cool down/loading operations, will be communicated as soon as possible, **and must be agreed upon before commencing operations**. Agreement must be reached between the master or his mate and the Loading Master or, in his nonattendance, the Shift Supervisor on duty representing The Terminal.

11. LANGUAGE

The language used in communications is ENGLISH or SPANISH.

12. SHIP/SHORE SAFETY CHECKLIST

Following the IMO recommendations on the safe transport, handling and storage of dangerous substances in port areas, the annexed safety checklist to these recommendations is mandatory at Ferrol port and the LNG Terminal.

[Appendix 2 Safety check list](#)

The ship/shore safety checklist has to be filled out by the Chief Officer (master's mate) for the LNG vessel and by the Loading Master as representative for the Terminal. The completed checklist must be available for control by the Port Authorities. Every 4 hours the representative of the shore will make a repetitive check in agreement with vessel's representative about all R points the safety check list. The vessel manifold shall be monitored by the vessel assigned responsible at all times.

13. NAUTICAL MEASURES OF MANAGEMENT ON ARRIVAL

All procedural measures for entering the harbour of Ferrol and berthing at the LNG Terminal, are described in safety norms document at www.apfsc.com



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14. MOORING OPERATIONS

The mooring of the ship shall be carried out safely and promptly under the instructions of vessel's master assisted by the pilot.

The mooring configuration is deemed suitable for all year weather conditions.

15. STORES AND DELIVERIES TO VESSEL

Deliveries to vessel shall be announced by the shipping agent to Harbour Master and to REGANOSA Terminal. He must indicate the estimated duration of this operation.

Delivery of stores is done preferably, and unless otherwise mentioned, immediately after completion of operations by barge.

16. GARBAGE

The shipping agent is responsible for the disposal of garbage from vessel and should be performed by barge.

17. SECURITY AND ACCESS CONTROL

17.1. General

The Shift Supervisor on duty acts on behalf of the Port Facility Security Officer. All security related questions should be addressed to him. He is authorized to sign the "*Declaration of Security*" and will concur with the Ship Security Officer the additional security measures in case the vessel or the Terminal is at a security level other than 1.

Security and access control for the LNG facility is the responsibility of REGANOSA's Terminal. Normal access to terminal facilities is via the main entrance (East gate).

Security and access control on board of vessel is the Ship Security Officer's (SSO) and Master's responsibility and remains subject to the master's approval and owners instructions. At the main entrance gate, the LNG Terminal will register all visitors. All visitors must be announced in advance in order to get access to the jetty and/or quay area.

Delivery of ship's stores shall be supervised and controlled on the jetty/quay by a crew member appointed by the SSO or the master. The stores shall be provided by barge.

Unaccompanied baggage is not allowed and will be handed over to the authorities.

At a security level other than 1, additional security precautions shall be taken in accordance with the ISPS code.

The customs for personnel and the clearance of any baggage taken by persons accompanying is the responsibility of the agent.

17.2. Shore Leave for Officers and Crew

At all times sufficient amount of officers and crew has to be delegated by the master, shall remain on board the vessel to oversee deliveries to the vessel, security and access control, cargo operations, safe running of machinery, mooring safety and emergency navigation of the vessel.

Personnel leaving and returning to the vessel shall use the road around the LNG Terminal. On this road, the entrance gate is controlled by REGANOSA's Terminal security service. The control consists in the registration of the people, based on the updated crewlist, previously forwarded before the



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20. APPENDIX & FORMATS

20.1. APPENDIX

- ✓ Appendix 1 General Mooring Arrangement
- ✓ Appendix 2 Safety check list.
- ✓ Appendix 3 Ship-Shore Links
- ✓ Appendix 4 Typical Flange at Mugardos

20.2. FORMATS

N/A

