ENVIRONMENTAL, SAFETY AND QUALITY MINIMUM CRITERIA FOR LNG CARRIERS CALLING AT THE TERMINAL

OFFSHORE LNG TOSCANA S.p.A. (OLT)

WAIVER: The following Environmental, Safety and Quality Minimum Criteria for LNG Carriers calling at Terminal GNL FSRU TOSCANA is subject to further amendments, it is disclosed only for information purposes and shall not be binding in any manner on OLT S.p.A., its affiliates, parent companies, representative and counsel involved in its preparation and approval. The following Environmental, Safety and Quality Minimum Criteria for LNG Carriers calling at Terminal GNL FSRU TOSCANA were prepared by OLT S.p.A. exercising all reasonable care. However, OLT S.p.A., its affiliates, parent companies, representative and counsel involved in its preparation and approval shall not be liable or otherwise responsible for its use -even partial -and any damages or losses resulting out of its use in any case (individual or not) and in whatever jurisdiction.

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INTRODUCTION

The purpose of this document is to provide LNG Carrier Owners or Operators with an understanding of the minimum criteria with respect to marine, environmental, safety and quality assurance standards for LNG Carriers calling at the Terminal.

Reference to, “Owners” and “Operators” includes the technical manager having day to day oversight of the management of the LNG Carrier and their safety management systems.

LNG Carriers not meeting minimum criteria, may, notwithstanding previous acceptance, no longer be permitted to call at the Terminal.

In certain circumstances, where only part of the minimum criteria cannot be met, and an acceptable mitigation procedure is in place in these respects, an LNG Carrier may be accepted for a limited period at the Terminal’s sole discretion and upon written confirmation that the LNG Carrier’s non compliance with the minimum criteria will be remedied at the earliest opportunity.

LNG Carrier Owners and Operators shall familiarize themselves with the information regarding LNG Carrier inspections contained in this booklet.

It is the responsibility of the vessel Owners and Operators to ensure that their LNG Carriers meet or exceed the minimum criteria and can demonstrate this through inspection reports or other documents acceptable to the Terminal.

PRE INSPECTION QUESTIONNAIRE FOR CALLING LNG CARRIERS

LNG Carrier Owners/Operators structure

LNG Carrier name: IMO No: Flag:

AA - registered owner (specify primary contact data including name and telephone number to whom management company (if any) reports):

BB - parent company / group to which the registered owners belong (specify primary contact data including name and telephone number):

CC - management company (if any) (specify primary contact data including name and telephone number):

since:

DD - time charterer(s) (if any) (specify primary contact data including name and telephone number):

from: to:

LNG Carrier crew nationalities and employment

EE - nationalities of the :

four senior officers:

other officers:

crew:

FF - are senior officers employed by management company or manning agent (yes / no), if yes

insert name:

GG - What is the working language on board the LNG Carrier?:

LNG Carrier History

HH - last three LNG unloading terminals visited and dates of calls:

II - last dry dock date and place:

JJ - last revision of OCIMF VPQ available (yes / no), if yes, provide copy:

KK - operational SIRE inspection report less than one year available (yes / no), if yes, provide copy:

LL - copy of last Port State Control report if available (yes / no), if yes, provide copy:

MM - date of full ISPS compliance:

NN - date of last intermediate ISM audit with administration and provide copy of summary of non conformities and/or observation:

LNG Carrier Class

OO - Classification Society (which must be a member of IACS):

PP - is LNG Carrier free of any limitation with respect to its operation or equipment and without any pending restriction / condition memo from Class including with respect to her hull, structure, cargo systems (including pumps and tanks), power and propulsion systems (including main or auxiliary engines), boilers, steering systems, navigational equipment, mooring winches? If not, provide copies of latest relevant Class survey(s) and any condition(s) of Class and state any such deficiencies:

QQ - if LNG Carrier is more than 20 years old provide detailed list of Class surveys status.

LNG Carrier Custody transfer monitoring system

	Date of last check certificate	Certificate number and certification company/authority
Temperature		
Tank level (main)		
Tank level (back up)		
Tank volume calibration		

LNG Carrier interface with Terminal

SS - is there any change made on LNG Carrier since last visit to Terminal which may affect its ability to moor alongside, connect and discharge (yes / no), if yes provide details:

TT – is LNG Carrier in compliance with OCIMF and SIGTTO standards for manifolds and moorings (yes / no), if yes, provide evidence / certificate:

UU - does LNG Carrier hold a CAP 2 rating or better for hull, structure, machinery and electrical system and cargo systems, to be gained after reaching twenty years of age or by 4th Special Survey, whichever is earlier.LNG Carrier older than 30 years will not be accepted.

Please note that the maximum period of validity of a CAP rating is three years from the last day of the CAP survey. CAP ratings and reports issued by IACS members are acceptable, provided that they include fatigue analysis.

Owners' declaration

Owners warrant that the statement made in response to this questionnaire are complete and correct.

Company Stamp Date Signature

HESQ CRITERIA

The following factors are relevant in the context of the LNG Carrier operational inspection while alongside the Terminal:

1. TMSA and CAP ratings;
2. condition of the LNG Carrier and operational status as determined from VIQ and physical inspection;
3. LNG Carrier performance reports received from marine terminals, if available;
4. any change of Classification Society;
5. any change of technical management;
6. operational incident performance, incident management and incident investigation management;
7. Port State Control detentions; and
8. any other relevant factors.

An LNG Carrier inspection may be arranged if:

1. Inspections are arranged with the permission of the LNG Carrier operator. It is expected that the operator will advise the LNG Carrier Master; Inspectors are instructed to report to the Master, (or the Officer on Watch, if the Master is not available), on boarding the LNG Carrier. The inspector will conduct their inspections in such a way as to minimize interference with the operation or management of the LNG Carrier.
2. The last inspection is beyond its date of validity.

During inspection the following operational measures will apply:

1. No other inspections of the vessel scheduled at the same time.
2. Inspectors will review findings with the Master or the Master's representative on completion of the inspection and prior to departing the LNG Carrier a copy of the inspector finding to be handled over to the Master of LNG Carrier.

Inspection systems

The Terminal support the use of the OCIMF SIRE Uniform Vessel Inspection Procedure and the CDI Inspection System, if applicable.

Reporting incidents

The Terminal require a record of all incidents Tto be sent to lngc@oltoffshore.it and require that LNG Carrier owners and operators ensure investigations are completed, root causes identified and that, since last SIRE, effective corrective/preventative actions are taken.

In line with the ISM, owners and operators are expected to maintain an internal incident and near-miss reporting and recording system, from which lessons can be learned, and necessary preventative actions can be taken.

SECTION A – GENERAL INFORMATION

The Owner/Operator of an LNG Carrier are required to provide the Terminal with an up-to-date copy of the current version of OCIMF/CDI "Vessel Particulars Questionnaire (VPQ)" and are reminded of the importance of accuracy in the VPQ.

SECTION B – CERTIFICATION, DOCUMENTATION and PUBLICATIONS

LNG Carriers shall be in full compliance with all applicable international conventions, laws, regulations and/or other requirements of the country of LNG Carrier's registry and Italy.

Procedures manuals covering safety, navigation, cargo -handling, pollution -prevention and mooring shall be maintained onboard for the use of the LNG Carrier's crew. The current versions of the publications listed below, are required, but equivalent publications may be accepted.

IMO - Safety of Life at Sea (SOLAS).

International Convention on Standards of Training, Certification and Watch -keeping (STCW)

ICS - Guide to Helicopter/Ship Operations.

ICS/OCIMF - Guidelines for the Control of Drugs and Alcohol On Board Ships

ICS - Bridge Procedures Guide

IMO - International Regulations for Preventing Collisions at Sea

OCIMF - Mooring Equipment Guidelines.

OCIMF - Effective Mooring

IMO - MARPOL 73/78 Consolidated Edition

OCIMF/ICS - International Safety Guide for Oil Tankers and Terminals (ISGOTT)

OCIMF "Recommendations for Ships Fittings for use with tugs with particular reference to Escorting and other High Loading Operations".

IMO – International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk - IGC Code, or

IMO – Code for the Construction and Equipment of ships carrying Liquefied Gases in Bulk. – Gas Code, or

IMO – Code for Existing Ships Carrying Liquefied Gases in, as appropriate.

ICS - Tanker Safety Guide (Liquefied Gas).

OCIMF/SIGTTO- Ship to Ship Transfer Guide (Gas)

SIGTTO - Liquefied Gas Handling Principles on Ships and in Terminals

SIGTTO - Introduction to the design and Maintenance of Pressure Relief Valves on Board Gas Carriers.

ITALIAN DECREE 2 Agosto 2007- Norme provvisorie per il trasporto marittimo alla rinfusa delle merci pericolose allo stato gassoso, norme per gli allibi e procedure amministrative per il rilascio dell'autorizzazione all'imbarco ed il nulla osta allo sbarco delle merci . (GU nr. 203 del 1.9.2007

Note – with respect to the Italian Decree 2 Agosto 2007, an LNG Carrier is required to have onboard an electronic copy of this Italian Decree, translated into English, if necessary, through local Agent before arrival.

SECTION C – CREW MANAGEMENT

All Masters should have sufficient manoeuvring experience, preferably with side -by -side mooring in a seaway, as Master or Chief Officer or as supernumerary on the same LNG Carrier or class of LNG Carriers having the same or similar handling characteristics, or have attended a suitable ship -handling simulator course at an installation capable of adequately simulating the manoeuvring of side -by -side mooring for an offshore -installation.

ALL OFFICERS IN DIRECT CONTROL OF CARGO -HANDLING OPERATIONS SHALL HAVESUFFICIENT PROFICIENCY IN ENGLISH LANGUAGE TO COMMUNICATE EFFECTIVELY WITH THEIR COUNTERPARTS ON THE TERMINAL.

All officers and watchkeepers shall possess valid certificates/licenses appropriate to and required for their rank or position on the LNG Carrier. This should include Dangerous Cargo Endorsements as specified in STCW / IGC.

In addition to compliance with their Safe Manning Certificate, LNG Carriers are expected to be able to meet the following minimum requirements:

- at least one Master and three licensed deck officers and at least one Chief Engineer and three licensed assistant engineers and an Electrical Engineer.
- Other manning arrangements may be considered following a review on a case-by-case basis. This will include a review of crew competence/experience, conditions of service, leave rotation, equipment and procedures to address contingencies.

The LNG Carrier should have and comply with written procedures for monitoring and controlling maximum hours worked / minimum hours rested and fatigue avoidance.

For any LNG Carrier calling at the Terminal, its Owner/Operator warrants that it is operated under an Alcohol and Drug Abuse Policy which meets or exceeds the standards set out in the ICS/OCIMF publication “Guidelines for the Control of Drugs and Alcohol Onboard Ships” that defines alcohol impairment as a blood alcohol content of 40mg/100ml or greater, and that contains provisions for drug and alcohol testing that includes unannounced testing, and routine medical examinations for all officers; and provides for all officers to be so tested at least once a year through the combined program of unannounced testing and routine medical examinations.

OLT S.p.A. SPONSOR ZERO ALCOHOL POLICY

SECTION D – NAVIGATION

In addition to statutory requirements, each LNG Carrier should be equipped with at least the following equipment, which shall be maintained in good operational order. It is recognized that some governing Flag States may require ADDITIONAL equipment to that required in this section. Further, Flag States may require certain items of equipment to meet local operating standards or "Type Approval".

It is expected, that the LNG Carrier is fitted with a Voyage Data Recorder system to store navigational data, bridge audio, etc. so that the data stored can be retrieved and analyzed following an incident.

It is required that the LNG Carrier is fitted with a wind speed/direction indicator.

It is required that the LNG Carrier shall be equipped with adequate means of measuring vessel movement, to include both speed and rate of turn.

It is expected that the LNG Carrier shall be equipped with two gyro compasses or, one gyro compass and one transmitting magnetic compass.

The LNG Carrier shall have means of taking visual compass bearings from the bridge.

The LNG Carrier shall be fitted with at least two (2) radars, 3cm and 10 cm (X & S band).

The LNG Carrier shall be fitted with rudder angle indicators and propeller RPM/ controllable pitch propeller pitch setting indicators, at the central conning position and with bridge repeaters.

The LNG Carrier shall be fitted with and make use of a course recorder.

The LNG Carrier shall be fitted with GPS receiver/display.

Manuals providing guidance in relation to navigation and bridge procedures shall be maintained onboard; a hard copy of these procedures shall be on the bridge.

An effective system shall be in place to maintain all necessary nautical publications and charts up to date.

If the LNG Carrier is equipped with an electronic chart system (ECDIS) as the primary means of navigation, all deck officers using the system shall have undergone a documented training program.

The LNG Carrier is expected to receive regular Notice to Mariner’s updates appropriate to the Terminal’s location.

It is expected that the LNG Carrier shall have a fully documented passage plan, approved by the Master, covering all legs of the voyage, both at sea and in port, including when a pilot is aboard. Such passage plan(s) shall therefore properly include all navigation within the vicinity and concern of the Terminal.

As a minimum the passage plan (s) should include the following elements:

1. Appraisal: review of all relevant information pertaining to the voyage leg.
2. Planning: a detailed written plan should be prepared with items such as danger areas, tidal data, waypoints, etc. highlighted on the voyage charts.
3. Execution: a process to ensure the bridge team reviews the plan and that
4. controls are in place to ensure it is safely executed.
5. Monitoring: the bridge team should use all available means to monitor the passage including the actions of the pilot, and review against the plan.

It is required that Owner/Operator ensures that the Master and deck officers have undergone adequate training in Bridge Resource Management.

It is required that there be posted on the bridge of the LNG Carrier, alongside other manoeuvring data, the results of a ZIG-ZAG test as per IMO MSC/Circ 1053 1.3.2

It is required that the LNG Carrier be able to demonstrate that there are two independent means of verifying the LNG Carrier's position.

The LNG Carrier shall maintain a record of deviations for magnetic compasses and a record of error for gyro compasses to enable corrections of bearings/courses to "true" readings.

It is required that the LNG Carrier be capable of receiving weather faxes.

SECTION E – SAFETY MANAGEMENT

All crew members working in hazardous areas shall use adequate personal protective equipment (PPE) for the operations being conducted and the risk involved.

The LNG Carrier's accommodation ladders for pilot embarkation shall comply with SOLAS Regulations and the IMO Recommendation on Arrangements for Embarking and Disembarking Pilots.

The LNG Carrier shall carry Emergency Procedures that cover, as a minimum, action to be taken in the event of collision, pollution, fire and explosion, and also cargo gas releases.

LNG Carriers shall demonstrate documented procedures for the safe entry into potentially dangerous or enclosed spaces, with, as a minimum, an "Entry Permit" system as described in ISGOTT.

It is required that LNG Carrier have an automatic system of fire detection in the accommodation and galley areas.

SECTION F – POLLUTION PREVENTION

LNG Carrier provide with office and after hours telephone numbers and details of their shore emergency response organization to facilitate operator/charterer communications in the event of a vessel casualty or escape of cargo.

All flanged connections requiring bolts shall be fully bolted at all times. All open-ended cargo, bunker or ballast pipe work and unused manifolds shall be blanked and fully bolted (or capped in the case of small diameter lines). Any blank flange fitted on the LNG Carrier shall be of sufficient strength for the certified line pressure.

Pollution control equipment shall be available; as a minimum, the following equipment shall be available.

a. absorbents
b. non-sparking hand scoops, shovels, and buckets
c. containers suitable for holding recovered waste
d. emulsifiers for deck cleaning
e. protective clothing
f. two (2) non-sparking portable pumps with hoses in good operating condition. Unless otherwise stated in the manufacturer instructions, all portable pumps shall be earthed when in use.

Vessels shall have in place an Environmental Policy covering pollution from the following sources, as appropriate:

- oil, associated products/chemicals, LNG
- noxious liquid substances
- sewage
- dangerous goods
- garbage
- ballast water (including the transfer of micro-organisms)
- cargo vapour and engine exhaust emissions
- halons and CFCs
- noise
- anti-fouling paints

Guidelines issued by the International Chamber of Shipping "Shipping and the Environment - a Code of Practice" should be used as a reference.

SECTION G – STRUCTURAL CONDITION

No pending conditions of class: A class memo should be allowed as it normally covers an item which cannot be rectified at the moment of occurrence but does not affect in any way the safety nor the integrity of the vessel.

SECTION H – CARGO AND BALLAST SYSTEMS

The vessel shall have on board documentation showing maximum loading rates, venting capacities and maximum permissible pressure and vacuum eachtank can withstand.

Material Safety Data Sheets (MSDS) for LNG being handled shall be displayed.

A detailed and documented cargo-handling plan shall be prepared and available for every cargo or ballast operation undertaken.

the approved trim and stability booklet, are prominently displayed at the cargo/ballast transfer control station, and any computer software by which stability calculations are performed display the approval /test certificate.

A cargo computer, or equivalent, is required to enable stability calculations to be made, prior to and at any stage of the cargo operation and to calculate hull stresses. Computer program to be Class approved.

Proof of monthly test of said cargo computer versus trim and stability booklet shall be available on request.

All LNG Carrier shall have on board portable gas detection equipment in compliance with SOLAS requirements and SIGTTO guidelines.

. LNG Carriers shall be aware of the phenomena of “sloshing” and "rollover", and have procedures onboard outlining the hazards and appropriate precautions.

Cargo related pressure relief valves, alarms, trips, and emergency shutdown systems (ESD) shall be used and maintained in accordance with the manufacturer instructions and covered by a routine testing program with records maintained onboard. The following alarms/trips shall be included:

1. Tank High and Low Pressure (including pump/compressor trips).
2. Tank Relief Valves.
3. Air Locks.
4. Vent riser.
5. Tank High and independent High/High level.

All cargo ullage, temperature and pressure monitoring instrumentation and Cargo plant instrumentation MUST be routinely tested and calibrated in accordance with the manufacturer instructions, with records kept onboard.

Cargo pipelines shall be maintained in good working order. Insulation where fitted MUST be intact.

Liquid spill containment arrangements shall be appropriate for the cargoes and fuel carried.

There shall be in place a system to routinely monitor and test, in accordance with the manufacturer's instructions, the effectiveness of all gas tight seals fitted between the compressor room and motor room where these are separated by a bulkhead or deck.

Airlocks fitted to electrical motor rooms in the gas hazardous zone of the LNG Carrier shall have a system for periodic testing of alarms, trips and interlocks. All earth bonding and continuity straps shall be in good condition

When LNG carriers use cargo as fuel they shall have procedures onboard to ensure compliance with the requirements of the IGC Code (Ch.16) and precautions outlined in the ICS Tanker Safety Guide (Section 4.9.3.)

Procedures should cover the whole system operation and the routine testing and maintenance on the main gas line integrity and the critical systems associated with the process including (but not limited to); gas detection, master gas valve isolation, ventilation interlocks, alarms etc.

Documented records of the tests and maintenance carried out on the system shall be maintained onboard.

It is required that personal multiple gas detecting alarm units are used by each person working in a potentially hazardous area.

All LNG Carries have on board records of tests to show that all gas detection equipment (fixed and portable) is routinely maintained.

Appropriate span/calibration gas, maintenance kits and batteries shall be carried to enable the equipment performance to be checked and kept in a fully operational condition.

The LNG Carriers shall have onboard documented maintenance procedures and test records that relate to critical systems. Critical systems include the cargo pumps, piping, valves, inert gas system and cargo instrumentation. (See also TMSA).

SECTION K – MOORING

SIDE BY SIDE TRANSFER

All SIDE BY SIDE transfers shall be conducted per the ICS/OCIMF/SIGTTO Ship to Ship Transfer Guide (Liquefied Gases - latest edition) MUST be used. Additional criteria for specific locations are detailed below.

The Master and senior deck officers should have previous appropriate experience in side by side operations.

Minimum mooring requirements: LNG Carriers shall have 16 moorings as detailed in the Terminal manuals.

All mooring lines shall be fitted on self-stowing mooring winch drums and fitted with brakes having a holding capacity sufficient for the intended mooring.

NOTE: Mooring Retention = Number of Mooring Lines multiplied by the line breaking strength OR the winch brake holding capacity when fitted to self stowing mooring drums.

High-Modulus Synthetic Fibre Ropes: mooring lines may be "high-modulus synthetic fibre" Ropes, however, if so fitted, the rope manufacturer's guidance and OCIMF publication "Guidelines on the Use of High-Modulus Synthetic Fibre Lines on Large Tankers" MUST be fully complied with.

MOORINGS - GENERAL

The use of mooring lines (wire, high-modulus or regular synthetic fibre ropes) of differing breaking strength, running in the same direction (i.e. mixed mooring), is not acceptable.

Synthetic mooring tails, if fitted to wire ropes, shall be connected to the wire with Mandal or Tonsberg type shackles. Where tails are fitted to high-modulus synthetic fibre ropes the connection shall be made in full compliance with the recommendations laid down by the manufacturer of the high-modulus synthetic fibre rope.

Synthetic mooring tails shall meet OCIMF guidelines

Mooring wires and synthetic lines shall be reeled on their drums in the direction which enhances brake holding power.

All mooring ropes, wires, winches, brakes, tails and shackles be in good condition; test certificate available where applicable.

LNG Carrier ensure that winch brake holding capacity at the rendering point is tested annually and that the proper tension setting is recorded. (Ref. to OCIMF "Mooring Equipment Guidelines").

Certificates listing the breaking strength of each wire and rope shall be kept on board.

Mooring winches, lines and fittings are critical systems and shall have documented maintenance procedures and test records.

LNG Carriers comply with the OCIMF "Recommendations for Ships Fittings for use with Tugs with particular reference to escorting and other high loading operations.

SECTION L – COMMUNICATIONS

The LNG Carrier shall be equipped with sufficient portable VHF/UHF intrinsically safe mobile units for use by key personnel involved with deck operations. VHF radio telephones, required under SOLAS Reg. 6. 2.1.1, shall not be used for this purpose.

VHF radio telephone shall be fitted in the LNG Carrier's cargo control room.

SECTION M – ENGINE ROOM AND STEERING GEAR

LNG Carriers shall be fitted with bilge alarms in the engine room.

One of the steering systems shall be capable of operating from the emergency power supply. It is also required that an LNG Carrier complies with SOLAS Chapter II-1, Regulation 29, Para.16 and Para.20.

The LNG Carrier shall be fitted with a main and an auxiliary steering system including two independent steering motors and hydraulic pumps (or equivalent duplicate systems).

Even if the LNG Carrier is suitable for unattended Engine Room operations, the Engine Room shall remain manned at all times when alongside the Terminal.

An Engine Room Log Book shall be contemporaneously maintained as a complete and accurate record of all activities and incidents in the machinery spaces.

SECTION N – GENERAL APPEARANCE AND CONDITION

All LNG Carrier equipment and areas are expected to be properly maintained, clean, painted, and in good fabric condition. All equipment shall be in good working order.

ATTACHMENT A - DRUG AND ALCOHOL DECLARATION

Drug and Alcohol Policy

(sample)

Blanket Declaration

To: FSRU Toscana LNG Terminal

Re: Drug and Alcohol Policy

The undersigned warrants and represents that it has a policy on Drug and Alcohol Abuse

("Policy") applicable to the vessel which the undersigned now owns and/or operates. This Policy meets or exceeds the standards in the Oil Companies International Marine Forum Guidelines for the Control of Drugs and Alcohol Onboard Ship.

The appropriate seafarers to be tested shall be all vessel officers and the drug/alcohol testing and screening shall include unannounced testing in addition to routine medical examinations. An objective of the Policy should be that the frequency of unannounced testing be adequate to act as an effective abuse deterrent, and that all officers be tested at least once a year through a combined program of unannounced testing and routine medical examinations.

Vessel Owner/Operator Name

Person signing on behalf of Vessel Owner/Operator

Title or Authority held by person signing

ATTACHMENT B – TERMINAL GNL FSRU TOSCANA SATISFACTION SHEET

Vessel:
IMO nr.
Operation
Discharging:
Date:

	EXCELLENT	AVERAGE	POOR	REMARKS
SAFETY AWARENESS				
PRE-TRANSFER MEETING				
COMMUNICATIONS TO/FROM VESSEL				
MANIFOLD WATCH				
CREW ENGLISH SKILLS				
PILOT/TUGS SERVICES				
VESSEL MOORINGS				
PUMPING				
CREW CO-OPERATION				
SHIP APPEARANCE				
SHIP'S AGENT SERVICES				
OTHER (Comments below)				

CHIEF OFFICER **MASTER** **TERMINAL REPRESENTATIVE**