

REVITHOUSSA LNG TERMINAL

LNG VESSEL APPROVAL PROCEDURE



“LNG VESSEL TECHNICAL AND OPERATIONAL COMPATIBILITY WITH REVITHOUSSA LNG TERMINAL”

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Definitions

The terms referred to in the LNG Vessel Approval Procedure have the meaning assigned to them by Article 1 of the Network Code for the Regulation of the National Natural Gas System (Code) or the partial provisions of the Code and by Article 2, L. 3428/2005 (FEK A 313) (Law) and the additional below mentioned terms have the following meaning:

Test Unloading: The first unloading of an LNG Vessel, which is not enlisted in DESFA's List of Compatible Vessels .

LNG Vessel Representative: The authorized person, assigned by the LNG User, who shall cooperate with DESFA for the fulfillment of the requirements of the current Procedure, and for all other issues that may arise before and during the LNG Vessel unloading to the LNG Terminal facilities.

List of compatible Vessels: The list of compatible vessels that is drawn up by DESFA and is published in the web site of DESFA, includes all vessels that have been approved as compatible for LNG unloading in the LNG Terminal, according to provisions by Article 89 of the Network Code for the NNGS Regulation.

Agent or LNG Vessel: The local Greek company authorized by the LNG User, or/and Ship-owner, or/and LNG Vessel Operator, which represents all of the abovementioned for protecting their interests and, undertakes the management and arrangement of all the required actions for the LNG Vessel entrance to the Greek territorial waters and DESFA's port.

ESD: Emergency Shut Down System

GIIGNL: The International Group of Liquefied Natural Gas Importers

IMO: International Maritime Organization

SIGTTO: Society of International Gas Tanker and Terminal Operators

SIRE: Ship Inspection Report

SSSP: Ship Shore Safety Plan

OCIMF: Oil Companies International Marine Forum

General

The object of LNG Vessel Approval Procedure is to describe the steps which should be followed for

1) taking place the exchange between DESFA and the LNG Vessel Representative of all required certificates, documentation and information concerning any technical and safety specifications for the berthing, mooring, connection, LNG discharging, disconnection and departure of the LNG Vessels from the LNG Terminal facilities, the type and the content of the legal certificates and inspections of the LNG Vessel and 2) checking the technical and operational compatibility of the vessel and any other action that will be held essential during the compatibility study.

The above mentioned steps of LNG Vessel Approval Procedure are listed below:

1. Preparatory information exchange concerning valid certificates, technical and safety specifications of LNG vessel
2. LNG Vessel compatibility study with the LNG Terminal (Ship-shore interface study)
3. LNG Vessel Inspection from an authorized inspector, if considered necessary by DESFA
4. LNG Vessel unloading test and ship approval
5. Ship Approval follow up

1. Preparatory information exchange concerning valid certificates, technical and safety specifications of LNG vessel

In this paragraph are described all the necessary information (manuals, drawings, certificates, etc.) exchanged between LNG Vessel Representative and DESFA concerning any technical and safety specifications for berthing, mooring, connection, LNG discharging, disconnection and departure of the LNG Vessels from the LNG Terminal , as well as the type and the content of all vessel certificates and inspections for the evaluation of the technical and operational compatibility procedure of the LNG Vessel with the LNG Terminal.

1.1 Information provided by DESFA to LNG Vessel Representative

LNG User, who intend to deliver LNG to the LNG Terminal, using a LNG Vessel, which is not included in DESFA's list of compatible vessels, should ask from DESFA for the following documents:

- The "Marine Procedures Manual".
- The "Jetty and Terminal Information" booklet, which are published in DESFA website (www.desfa.gr) according to the Network Code for Regulation of the NNGS.

The LNG User or the LNG Vessel Representative should also gather information related to the approaching procedures to DESFA's LNG Terminal, the anchorage area and pilot station, directly from the Port Authority or the Agency that will be used for the specific LNG Vessel.

1.2 Information provided by the LNG User to DESFA

The LNG User has to send to DESFA the following information regarding the specific LNG Vessel, prior to the preliminary meeting (par. 2.3) between the LNG Vessel Representative and DESFA, as anticipated hereinafter:

- Ship Inspection Report (SIRE) valid within 12 months, prior to its arrival and during alongside at DESFA LNG Terminal
- Vessel Certificate of Fitness for the carriage of liquefied gasses in bulk
- Class Status Report issued by a recognised Classification Society,
- LNG Vessel's insurance documents, Protection and Indemnity (P&I) Club membership,
- An updated Vessel Particular's Questionnaire,
- Description and certified tables of the Custody Transfer Monitoring System,

- LNG Vessel Operational and Safety Procedures. These procedures relating to mooring, LNG cargo transfer and fire fighting, pertain to the (**ISM**) code and constitute the SSSP for the LNG Vessel,
- The vessel's specifications for approaching, berthing, mooring procedures, number and horse power of tugs and mooring boats.
- Emergency Shut Down system, communication information (type, pin configuration and connection point distance from vapour line),
- Drawing of LNG Vessel flat body, General Arrangement
- Mooring study for berthing to the LNG Terminal Jetty. All mooring plans will be developed using a certified software
- Drawings or photos port / starboard side for the placement of the LNG Terminal gangway (the gangway tower is located on the LNG Terminal jetty, 36m west, seaward of vapour line).
- Main cargo pumps characteristics and curves of the LNG Vessel with delivered pressure at manifold.

2. Ship-shore interface study

DESFA and the LNG Vessel Representative will have to examine all documents referred in paragraph 1 hereinabove, so that both LNG Vessel and LNG Terminal to be aware of the interface in order to verify technical, operational and safety compatibility of the LNG Vessel and the LNG Terminal.

2.1 Document analysis

DESFA, after having examined carefully all exchanged information, shall conclude for the technical compatibility of the LNG Vessel at DESFA LNG Terminal. Conclusions of this interface study are then transmitted to LNG Vessel Representative.

The following minimum criteria are checked as part of the interface study:

- LNG Vessel's physical and technical compatibility with DESFA LNG Terminal.
- Chartered LNG vessels for unloading to DESFA LNG Terminal must comply with latest revision of IMO Gas Carrier Code (decision IMO A.328/IX & A.329/IX). Vessel constructed after or the date of 1-7-1986 and independently of her capacity must comply with the International Code for vessels carrying Liquefied Gasses in Bulk, decision of IMO MSC. 5(48), revision of the year 1983 of International Convention SOLAS "Safety of Life at Sea 1974" (ΠΔ 126/1987 (ΦΕΚ 70 Α')) as applied its time concerning the date that the vessel keel was laid or vessel was at the same stage of construction.
- LNG ship mooring equipment shall comply with Mooring Equipment Guidelines, OCIMF, 2008.
- LNG ship manifold construction shall anticipate with the "Recommendations for Manifolds for Refrigerated Liquefied Natural Gas Carriers (LNG), SIGTTO, 1994.
- LNG vessel navigational and safety equipment shall comply with all international and national regulations.
- LNG vessel ESD and communication system shall comply with the corresponding DESFA LNG Terminal ESD systems.
- Certification of gauge tables shall be issued by a qualified authority (for instance Japanese NKKK) in order to be approved by DESFA prior to the first unloading.
- Custody transfer Measurement system specifications and methods shall comply with the GIIGNL LNG custody transfer handbook recommendations.

2.2 Mooring plan

LNG Vessel mooring calculations and mooring plan should be prepared by the LNG Vessel Representative and should be notified to DESFA. DESFA examines and approves or rejects the mooring plan. The final mooring plan must be agreed by DESFA and the LNG Vessel Representative and it should be known

to the captain and the Agent of the LNG Vessel prior to the vessel's arrival to the LNG Terminal.

2.3 Preliminary Ship/Shore Interface meeting

After completion of the document analysis DESFA organizes at the LNG Terminal a preliminary meeting with the LNG Vessel Representatives in order to discuss and review all the above issues and to jointly decide upon them. LNG User Representative and authorized Agent shall attend to this meeting.

The minimum agenda of the preliminary meeting is as follows:

- Ship / Shore Interface study conclusions.
- Deviations or omissions of the LNG Vessel, if any, compared to the International Gas Carrier Code or other international regulations, which are found to exist by the inspections, have been conducted and the LNG Vessel certificates. DESFA has the ability to demand further inspections by an authorized third party.
- Review of all parameters of the completion of the Ship Shore Safety Plan. The documents dealing with firefighting, LNG cargo transfer and mooring are checked, completed accordingly and co-signed.
- The LNG Vessel Representative ensures the appropriate number and power of needed tugs for berthing, standby and unberthing according to the relevant port authority regulations and specific of 1421 ΓΝΓ/21/99/17-11-1999 circular "safety of tow", Ministry of Mercantile Marine and of 2121/02/08-01/2003 decision of Minister of Mercantile Marine "Approval of specific regulations of Elefsina Port Nu 49", "Tugs Boats of Elefsina Port" (ΦΕΚ Β' 63), and the 3131.1/01/07-01-1999 decision of Minister of Mercantile Marine "Approval of general regulations of Port Nu 18" (ΦΕΚ Β' 12).
- LNG Cargo tank custody transfer management.
- Shipper agent assignment and tasks.

Any LNG Vessel that shall have successfully completed abovementioned steps 1 and 2 of this procedure shall be considered as a pre-approved LNG vessel for her unloading test.

3. LNG Vessel Inspections

DESFA reserves the right to ask for additional inspection of the LNG Vessel prior to the test unloading. This inspection is carried out by an authorized inspector by DESFA, according to international organizations' standards.

An essential prerequisite, in order for a LNG Vessel to be considered acceptable for the LNG Terminal facilities, is the accomplishment of a satisfactory result for the aforementioned inspection.

A complete list with all comments and / or omissions, if any, will be handed to the LNG Vessel Representative. The list with the above mentioned comments / omissions is notified to the LNG User, who has the ability to forward it to the Ship owner and / or the charterer in order to carry out all the necessary corrective actions, according to the suggestions of DESFA's inspector. By receiving the implementation plan of the corrective actions, DESFA shall decide whether the vessel can be accepted to LNG Terminal.

Vessel acceptance by DESFA LNG following such inspection does not release the LNG Vessel Representative and the LNG User by their responsibility and obligations that arise from international rules and regulations, the Network Code for Regulation of the NNGS and the LNG Terminal Contract of Use and for any and all consequences of any such noncompliance.

Shipper shall promptly notify DESFA if any of its pre-approved or approved LNG Vessels has been rejected or has failed a ship safety inspection at another LNG terminal. The LNG User shall provide DESFA with all relevant details and information in that request.

4. Unloading Test and Final Results

Depending on the outcome of the previous steps, a vessel may either be approved (A) for an unloading test, or rejected (R).

4.1 Unloading Test

Any LNG vessel that has successfully completed the abovementioned steps 1, 2, 3, will have the ability to undergo an unloading test in order to verify absolute compatibility with DESFA LNG Terminal.

After the LNG Vessel has securely moored and before initiating the LNG cargo unloading, a joint meeting is held on board among DESFA (Representative of the LNG Terminal), the LNG Vessel Representative and the LNG Vessel's Representative, during which:

- A review and validation of the SSSP is completed in order to have a duly implemented document, concerning mooring, firefighting, LNG cargo transfer, cargo tank management, unloading communication and operational procedures.
- Vessel Representative and LNG Terminal Representative check and sign the Ship/Shore Safety Check list according to IMO.
- Unloading test takes place according to standard operational procedures of the LNG Terminal and the LNG Vessel.

4.2 Conclusions of the Vessel Approval Procedure

DESFA, after having evaluated all aspects of the unloading test, decides whether the LNG Vessel:

- Will not be accepted for future unloading to the LNG Terminal, accompanied by a written justification to the LNG Vessel Representative and the LNG User,
- Will be accepted in the future for another unloading test after having completed any corrective modifications on the vessel, exhaustively notified by DESFA,
- Will be accepted in the future without being subjected to further tests **for a three years** approval period and included in DESFA's list of compatible vessels.

5. Vessel Approval Follow Up

Before and during each call at the LNG Terminal, the LNG Vessel Representative shall provide instant assistance to DESFA LNG Terminal, to clarify and/or solve any urgent issues that may arise before or during each unloading. The LNG Vessel Representative must be announced to DESFA prior

to each arrival either by the LNG User or the Agent; otherwise the captain of the vessel will be perceived by DESFA as the LNG Vessel Representative.

The LNG User or the Agent shall provide to DESFA all necessary and relevant information on how DESFA can reach the LNG Vessel Representative via telephone, mobile phone, e-mail, etc. LNG Vessel Representative shall be on continuous standby before and during the vessel's unloading and he is empowered to make all necessary "ad-hoc" operational decisions on behalf of the LNG User, e.g. regarding any arising safety or security issues, LNG cargo off spec issues, vessel's chandler's issues, bunkering or waste handling issues.

During the approval period, DESFA shall be kept informed of any modifications performed to the LNG Vessel concerning any technical, safety and managerial issues. Based on these modifications DESFA shall verify whether the vessel needs a new approval.

An additional safety inspection may be required by DESFA in order to check the continuous compliance of the ship with safety and operational requirements of the LNG Terminal.

These inspections may occur during the berthing time at DESFA LNG Terminal or at any other time and place.