HAZIRA PORT PRIVATE LIMITED

HPPL-Manual

Port Information Book

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4.1	Contact list amended, New Port Limits added	13.06.2011
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5.1	Guidelines regarding procedure for LNG Berth hire charges added. Internal and external contact details amended. Visitor safety requirements elaborated	10.09.2013
5.2	Requirement of ships to adhere to HGC Drug & Alcohol policy added. Pressure requirements of cargo tanks added	05.05.2015
5.3	Review. Contact list amended. Port Limits amended	10.07.2016
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5.5	References to Total removed; Latest requirements as per the 2018 Shipping and Maritime DS HEMP included	10Oct 2019
5.6	Organization logo changed; Phone numbers amended;	14-Feb-2020

5.7	Conditions of Use Book replaced with Ship Shore Interface book; HO Address change	4 Dec 2020
5.8	Directory, Web address change	1 Feb 2022
6.0	Realigned as per OCIMF Guidelines	1 Mar 2023
7.0	Lod 3 observation presence of silt included section 5.5	29 Dec 2023

Contributors to this report: Port Operations Team

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Key contacts

In Case of Emergency (ICE)

In the event of an emergency at Terminal the LNGC should stop operations, raise the alarm by sounding the ship's whistle with six (6) or more short blast,supplemented by continuous sounding of the general alarm system, then contact the Pilot onboard or Terminal on UHF/ Hotline or EPBX (details below). The Pilot will contact the necessary parties and assist in the coordination of efforts between ship and shore.

Port Contact Details

Port Name	**Hazira (Surat) Port**
Port Operators	Hazira Port Private Limited
Hazira Port Control:	VHF 69 Landline-+91-261-4151165 EPABX NUMBER - 1165

Terminal Contact Details

Terminal	Shell Energy India Pvt Ltd 'SEIPL' (Previously Hazira LNG Pvt Limited.)
Terminal Control Room	UHF Ch 01- (Terminal supplied UHF for unloading) HOTLINE OR EPABX NUMBERS 1213, 1239or 1206
Registered Office:	Office No. 2008, The Address, Westgate - D Block Nr. YMCA Club, S. G. Highway, Makarba Ahmedabad, Gujarat India – 380051 Tel +91 79 47554100 Fax +91 79 47554101
Telephone:	+91(079) 47554100
Facsimile:	+91(079) 47554101/30011101.
Site Office:	Terminal Site, Near Well No 7 Hazira, Surat Gujarat-394270
Web site :	https://www.shell.in/shellenergy/hazira-port-pvt-ltd.html
Harbour Master (PFSO)	**Capt. Ankur Basu** Landline-+91-261-4151301 Ankur.basu@Shell.com
Pilots	**VHF Ch -69 / available on board while vessel is at berth.** GX-HAZ-HPPL-PILOTS@shell.com

1. INTRODUCTION

1.1 Purpose

This document provides the basic information on Hazira (Surat) Port.

1.2 Intended audience

This document is intended for HPPL, AHPL and SEIPL staff, Contractors, Mutual aid parties, all arriving vessels and regulatory authorities.

1.3 Scope

This document applies to Hazira Port Company, which is registered as:
Hazira Port Pvt Ltd is involved in Port operations including LNG Jetty operational interface with LNG Terminal.

1.4 PORT DETAILS

Port Name: Hazira (Surat) Port.
Location of Berth: Latitude: 21° 06' North Longitude: 072° 37' East
State/Country: Gujarat, Republic of India.
Hazira (Surat) Port, often mentioned as just Hazira Port, is built by Hazira Port Private Limited (HPPL), a Shell Gas B.V (Shell) subsidiary.
Designed as a deep-water, all-weather direct-berthing multi-cargo port, Hazira Port has been built with a protected harbour design, with two breakwaters and an additional waterfront for the development of non-LNG cargo handling facilities. The fully functional Hazira (Surat) Port with a short approach channel of ~1km and dredged depth of ~13m includes LNG jetty with an LNG storage and re-gasification terminal. Operational since April 2005, Hazira LNG Terminal & Port is among the largest international greenfield investments in India.
Bulk &General Cargo Terminal (namely four Multi cargo berths and two Container berths) have been developed south of turning basin, which is operated by AHPL (Adani Hazira Port Limited).
Hazira (Surat) Port is situated on the west side of the Hazira peninsula at approximately Latitude: 21° 06' North, Longitude: 072° 37' East.

Terminal

Terminal name: Shell Energy India Pvt Ltd 'SEIPL' (Previously Hazira LNG Pvt Limited.)
The LNG terminal is situated in the inter-tidal zone directly west of the forest boundary line.
HPPL confirms to the Quality Management Standard ISO 9001-2015 and Environmental Management Standard ISO 14001-2015 and is certified by DNV to be in compliance with the ISO Standards.

1.5 Change control.

Harbour Master is the custodian of this document and is responsible for the revisions, amendments and updates to this document with approval from Port Manager.

2. EMERGENCY PROCEDURES

2.1 General

During the cargo discharge meeting the Pilot, Loading Master and LNGC Master must reach agreement on the procedures to be followed in the event of an emergency.
At all times while an LNGC is alongside there must be sufficient deck and engine room personnel onboard to allow the LNGC to get underway and manoeuvre safely in an emergency situation.
The number of ship's personnel on board must be adequate for the LNGC to unmoor, clear the berth and move to anchorage.
In an emergency, the LNGC should consider stopping operations, raise the alarm by sounding the ship's whistle with six (6) or more short blast supplemented by continuous sounding of the general alarm system, then contact the Pilot on board or Terminal on UHF/ Hotline or EPABX NUMBERS 1213, 1239 or 1206.
The Master of the vessel is responsible for safety of the ship and emergency procedures on board as per vessel emergency plans.

The following safety information should be made available to all personnel on board at hazira (surat) port.

TERMINAL EMERGENCY PROCEDURES -

EMERGENCY	ALARM	ACTION
Gas / FIRE Alarm	Gas or Fire detection alarm is a sweeping signal up and down for 0.5 seconds repeated for 60 seconds.	On hearing this signal all operations will cease, arms/hoses to be disconnected and preparations to be made for immediate evacuation of the berth
EMERGENCY SIREN FOR ALL AREA.	Three cycles of: Ringing for 15 seconds. Silence for 60 seconds. Repeated for total three cycles.	On hearing this signal all operations will cease, arms/hoses to be disconnected and preparations to be made for immediate evacuation of the berth.
FIRE ONBOARD	At least six (6) blasts on the ships whistle each of not less than 10 seconds duration. Advise Port Control/ Jetty Operator by VHF/ UHF radio.	Cease all operations, arms/hoses to be disconnected and preparations to be made for immediate evacuation of the berth. Ship's crew to fight fire and take such action as required to prevent fire from spreading.
All Clear	All clear signal shall be a continuous siren for 60 seconds.	

MEDICAL EMERGENCY ONBOARD	Advise Hazira Port control/berthing master by VHF/UHF radio	The Port will advise the onsite Medical Centre.
LIGHTNING	Advise Hazira Port control/berthing master by VHF/UHF radio	All cargo and ballast operations shall cease when lightning is in the vicinity and tank pressures are high.

EMERGENCY ESCAPE

Primary escape route is by shore gangway to Jetty. A secondary means of escape must be provided on vessel's offshore side by providing ship's accommodation ladder, rigged, and ready for lowering.

2.2 Oil spill and vapour release

2.2.1 Oil spill onboard LNGC

Hazira (Surat) Port is equipped with Oil spill response equipment with capability of dealing Tier 1 level oil pollution and an oil spill response plan as per ICG requirements. The equipment includes Boom, Skimmer, Storage tanks, Dispersant Spray booms etc.

In the event of an oil spill on an LNGC ship:-

- Ship to activate ship's oil spill response plan
- Immediately stop the relevant operations and inform the Pilot on board.
- Raise the appropriate alarm.
- Consider stopping cargo unloading.
- Activate on board emergency procedures.
- Request pilot for standby tug for assistance
- Stop and contain leak if safe to do so.
- Liaise with Pilot for further actions to be taken.
- Inform Indian Coast Guard in case of spill in water.

2.2.2 Oil spill on the jetty

In the event of an oil spill on the jetty:

- Pilot/Terminal will stop the relevant operation and inform LNGC.
- Pilot onboard ship/Port control will activate port emergency procedures.
- Terminal will advise if cargo loading is to be stopped.
- LNGC will be advised if any assistance required.
- Pilot to liaise with the ship and shore for further actions.

2.3 Fire and explosions

In the event of fire and explosion on the ship

- Master to initiate Vessel 's emergency procedure.

- Initiate Emergency shutdown to stop cargo operations, close valves and disconnect loading arms as required.
- Sound the emergency alarm.
- Inform pilot/loading master, Terminal control and port control of nature of emergency and maintain open communication links.
- Ship master to Mobilise / control as per ship's emergency response.
- Pilot will assist by Mobilising standby tugs and will ensure shore readiness for response.
- Vessel fights fire with own resources and requests assistance of terminal resources as required .
- Prevent fire from spreading.
- Ship to keep engines standby for evacuating the berth.

In the event of fire and explosion on shore

- Vessel to stand by and when instructed by terminal cease all cargo/ballast operations, initiate emergency shutdown, and close all valves.
- Prepare firefighting equipment.
- Standby to disconnect loading arms as required.
- Keep vessel's engines and crew to standby.
- Be ready to unberth.

2.3.1 Fire prevention

Sources of ignition, including smoking, shall be restricted to designated areas on board the tanker (as agreed in Ship Shore Safety Check List) and on shore.
Certified and Approved electrical Equipment shall be in good order and maintained and operated such that its original certification is not jeopardized.
All portable electrical equipment, including handheld torches, radios, and gas analysers, which are operated in gas dangerous zones, shall be Approved Equipment for use in the flammable atmosphere concerned. All equipment should be in such a condition and operated in such a manner that its original certification is not jeopardized.
Use of tanker's main communications equipment and radar is prohibited during loading operations; however, the use of the satellite communications equipment may be permitted, subject to the approval of the Pilot on board or Loading Master and prevalent Government requirements.
Where essential tests etc. are required to the radar or communications equipment, the Pilot on Board or Loading Master must be consulted before such testing takes place. The precautions and recommendations set out in the International Chamber of Shipping(ICS) Guide must be strictly adhered to.
Whilst alongside the LNG berth, no tug or any other craft shall be allowed alongside unless, cargo operations have been stopped, valves closed and cargo decks secured, except in the case of an emergency the Pilot on board or Loading Master may permit tugs or other craft to go alongside subject to the agreement of the ship's Master.

2.3.2 Shore Firefighting equipment

Prior to vessel arrival, the terminal will ensure that all fixed and portable firefighting equipment is in a serviceable condition and ready for immediate deployment.
At all times while the ship is alongside, a tug will be on standby at AHPL tug berth ready to respond immediately on notification. In case of emergency, the Terminal or the LNGC's Master

may request assistance of the tug or tugs as required by informing Pilot on board / Port Control on Ch 69.

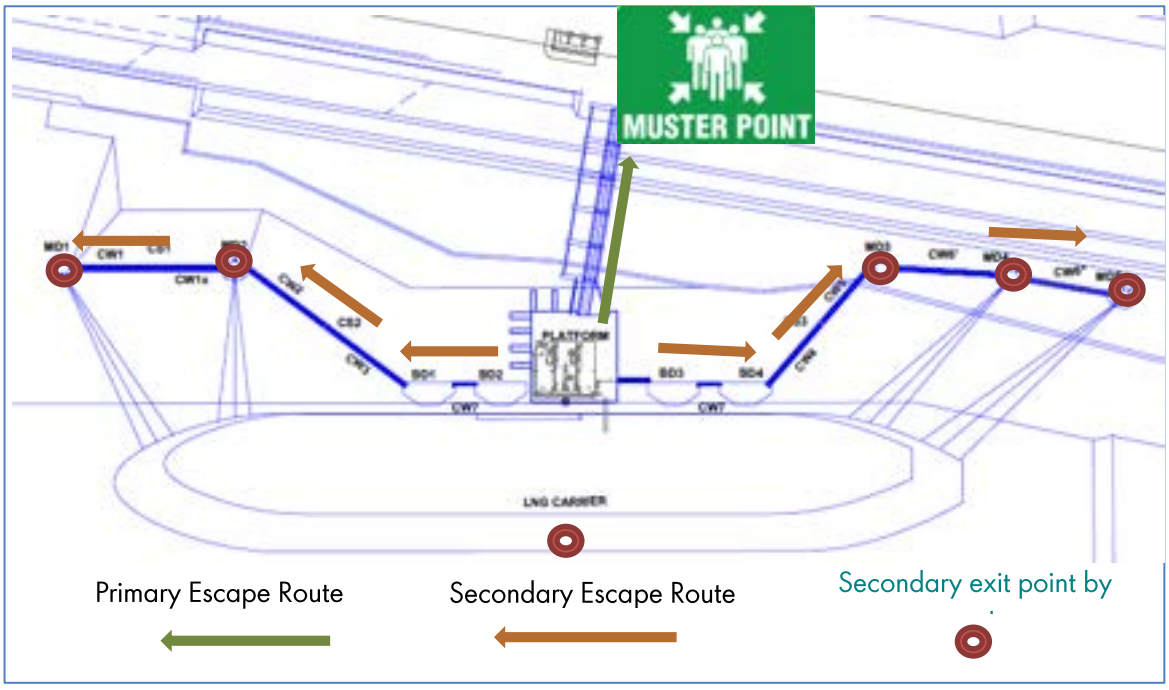
2.3.3 Ship's firefighting equipment

All fire-fighting equipment shall be in good working order. Portable equipment shall be correctly positioned, and ready for immediate use. The tanker's fire main shall be pressurised whilst alongside the Terminal's berths.
The International Shore Connection (ISC) shall be prominently identified with the connecting flange and bolts ready for immediate use on both ship and shore. Hoses shall be placed at both ship and shore international connections ready for immediate deployment.

The pre-deployment of emergency fire wires or towing off pendants is not a terminal requirement.

2.4 Evacuation (evacuation route and muster point map)

Primary escape route is by shore gangway to Jetty as indicated by the arrows in Green and Secondary escape route in brown



A secondary means of escape must be provided on vessel's offshore side. This will be ship's accommodation ladder rigged on seaside and ready for lowering.Evacution will be carried out by stand by tug boat within 15 mins.

Secondary escape route on the jetty are available on each MDs, where people can be rescued by rescue boat. Rescue boat is provided on stand by craft within 15 minutes.

2.5 Collision/damage to berth

Ship Master is always in-charge of his vessel.
If damage to the berth occurs or is suspected, the terminal should be notified immediately. In the event of a collision or serious damage, the berth will need to be assessed to ensure that it is safe to moor the vessel.

In the event of a collision / damage to the berth following actions are advised :-

- Inform Port Control room on VHF.
- Inform Pilot
- Activate Ship Emergency Response Plan
- Assess situation and initiate action.
- Initiate action to minimise damage.
- Assess damage to ship.
- Consider re-berthing / abort approach / proceed to sea.

2.6 Medical emergency

Ship Master is always in-charge of his vessel.

In the event of a medical emergency following actions should be taken :-

- Inform Pilot /Port Control room on VHF for assistance.
- Provide information on nature of assistance required.
- Inform the agent. Contact details of near by hosiptals are in Annex 8

2.7 Security breach

The Hazira (Surat) Port is ISPS compliant.
Access to the LNG Jetty is from the northern causeway. The access to this causeway is from within the Terminal area. A security guard house is located at the entrance of the causeway, which will check all personnel entering the causeway. A port control room with radar and AIS is manned 24 hrs a day. One tug is on stand-by and available to patrol the port waters.
The new admin building houses the port control room and Emergency Control Room. Port Control Room is equipped with radar, AIS, VHF, and communication equipment. Access to this room is restricted by means of automated access control system.

Ship Master is always in-charge of his vessel.

In the event of security breach following actions are advised :-

- Inform Port Control room on VHF with known details of security breach.
- Activate Ship Security Response Plan.
- Assess situation, minimise damage and safeguard people

Pilot will Co-ordinate between ship and shore security agencies for safety of berth and ship.

2.8 Person overboard

Ship Master is always in-charge of his vessel.

In the event of man over board following actions are advised :-

- Throw a lifebuoy to the person in the water.

- Activate Ship Emergency Response Plan manoverboard procedure.
- Maintain visual contact with the person in the water.
- Inform Port Control room on VHF.
- Initiate Distress call on VHF to alert vessel in vicinity
- Strong tidal flow can be experienced. If the person is struggling to hold on to the lifebuoy, release the line and indicate to the rescue vessel the location of the person.
- Port control will activate rescue boat as requested. Escort tug may be used for man overboard recovery measures.

2.9 Vessel breakout or drift along berth

Ship Master is always in-charge of his vessel.
The Master is responsible for ensuring that the vessel is adequately moored, moorings regularly tendered and manifold position maintained. Cargo operations should be stopped immediately if there are concerns regarding mooring integrity or if the vessel is not maintaining position.

In the event of vessel break out or a drift following actions are advised :-

- Stop all discharging operations.
- Clear port gangway
- Inform Port Control room on VHF.
- Inform Pilot
- Initiate request for tugs for assistance.
- Activate Ship Emergency Response Plan.
- Ship ready to evacuate berth
- If vessel position cannot be maintained safely then loading arms should be drained and disconnected immediately to avoid Emergency Release System (ERS) activation

2.10 Emergency Shutdown (ESD)

Ship Master is always in-charge of his vessel.

In the event of ESD activation following actions are advised :-

- Inform Terminal Control room on UHF.
- Inform Pilot
- Activate Ship Emergency Response Plan in case of ESD 2
- Evaluate the reason for ESD

On activation of ESD-1 the shore ESD valves will close within approximately19s which is based on detailed surge pressure calculations.

2.11 Incident notification policy

Any accident or dangerous occurrence on board any vessel operating in Hazira Port must be reported to the pilot on board/ Port Control as soon as practicable.
Any incident that involves the jetty or terminal or ship/shore personnel, or any incident involving the ship that will have a bearing on cargo, navigation, or personal safety, must be reported immediately to the pilot on board. All such incidents will be jointly investigated by personnel from the ship and the terminal, and the results of the investigations will be correctly recorded by each party and remidial action taken.

3. HEALTH, SAFETY AND SECURITY POLICIES

3.1 Personal Protective Equipment (PPE) requirements

All ship's personnel working on deck must wear the appropriate personal protective equipment. The port has a strict PPE policy. Minimum requirements are full length coverall, helmet with chin strap, safety glasses and steel capped safety shoes. Where ship's crew are on/off signing or taking shore leave, fully enclosed shoes may be worn instead of steel capped safety shores, no thongs or sandals are allowed.

3.2 Terminal access/crew to shore/visitors to vessel

3.2.1 Shore Leave LNG vessels.

Shore leave is permitted at the Hazira LNG terminal subject to compliance with the provisions of the Port Facility Security Plan. The Master should liaise with the ship's agent for arranging all the necessary permissions from Government authorities and transport to and from the terminal. All persons going ashore shall comply with the Port and Terminal Safety and PPE requirements. For identification he / she shall carry his / her passport while stepping off the vessel

3.2.2 Crew change and shore leave.

To ensure a smooth transition for all personnel joining, departing or taking Shore Leave while the vessel is in Port, the following timelines should be adhered to.
On Signing Crew – Full list submitted to Agent a minimum of five (5) days prior to vessels Port arrival date.
Off Signing Crew – Full list submitted to Agent a minimum of three (3) days prior to vessels Port arrival date.
It is the responsibility of the Master and the shipping agent to ensure crew members comply with all restricted items requirements. Refer Section 3.4.
No matches, lighters, or fireworks are allowed.
All intrinsically safe requirements must to adhered to.
Mobile phones, cameras, laptops etc. are to be turned off and placed within luggage or the terminal supplied pelican case.

3.2.3 Visitors to the Ship

Persons other than operational staff requiring access to jetties and ships in connection with the discharge of the LNG ship, must obtain permission from the Port Authority to enter the site and secondly have the ship master's approval to board the ship concerned.
Except for Government officials (police, customs, and immigration), ship's agent and cargo surveyor(s), twenty-four (24) hours' notice is required for clearance to enter the Port. Visitors should arrange for Custom / Immigration & Port Authority clearance through the ship's agent.
Persons arriving at the Port without prior notification will not be permitted entry.
Mandatory Safety requirements for visitors & ship's crew travelling through the terminal / port:

a) Visitors always to be escorted in the port / terminal areas.
b) On no account must visitors walk through the Port / Terminal area unless accompanied by a member of the Terminal's / Port's staff.

c) Full body must be covered with cotton clothing. Helmet and Safety glasses are required. Comfortable flat soled closed shoes must be worn. No loose clothing allowed.
d) Mobiles / Laptops or any spark generating object (portable drives or electric / electronic equipment) is prohibited. Mobile phones, cameras, laptops etc. are to be turned off and placed within luggage or the terminal supplied pelican case.
e) Visitors must undergo appropriate HSE Safety Induction prior entering the gas area.

3.2.4 Ships Stores

Facilities are available at the LNG berth for taking limited stores with prior permission of the port subject to compliance with the provisions of Port Security Facility Plan. All packages will have to be hand carried from jetty to ship deck via gangway. Storing is not permitted during LNG discharge operations. Stores can be arranged by boat at anchorage through agent.

3.3 Vessel/terminal security interface (Declaration of Security)

The Hazira (Surat) Port is ISPS compliant.
Access to the LNG Jetty and Port Crafts Berth is from the northern causeway. The access to this causeway is from within the Terminal area. A security guard house is located at the entrance of the causeway, which will check all personnel entering the causeway. A port control room with radar and AIS is manned 24 hrs a day. One tug is on stand-by and available to patrol the port waters. The port control building houses the Emergency Control Room. Port Control Room is equipped with Radar, AIS, VHF, and communication equipment. Access to this room is restricted by means of automated access control system.

For each vessel call DOS will be agreed between vessel and pilot on board. It is a statutory requirement that the terminal is aware of the number and identity of all the persons on board the ship while alongside. All regulators and contractors, including government officers, LNG surveyors, buyer's agents, shipping agents, ship chandlers and ship contractors who have business with the ship, must comply with the regulations. Requests for ship visits by other parties will be reviewed by the pilot / Harbour Master on a case-by-case basis.
A safe means of access between the jetty and the ship will be provided by the terminal. The ship is expected to provide its own security arrangements to avoid unauthorised access to the ship.
Access to the LNG Jetty will be controlled by the port security who will check all persons leaving and accessing the jetty. The ship should always have sufficient personnel onboard to comply with all Security and Operational requirements.

3.4 Drugs/alcohol

Alcohol, Drugs and Tobacco Policy:
HPPL subscribes to a strict Alcohol, Drugs and Tobacco Policy. The Port is situated in the State of Gujarat, India where use of alcohol is prohibited. Visiting vessels are required to abide by this law. Smoking or use of tobacco is not permitted when in the Port / Terminal premises.
Any person found under the influence of drugs / alcohol will be refused permission to enter the Port / Terminal.

3.5 Smoking

Smoking on the jetty, and in the terminal is strictly prohibited. Smoking on board ships is permitted only in those enclosed spaces that are specifically designated, mutually agreed to, and stated on the Ship/Shore Safety Checklist.

3.6 Portable electronic equipment and naked lights

3.6.1 Hot Work.

"Hot Work" in non-approved areas and work on open decks or on the jetty head, which involves hammering, chipping or the use of power tools is strictly prohibited.

3.6.2 Sources of Ignition

The carrying of equipment (unless Approved Equipment) and/or use of matches, lighters, or other possible sources of ignition, which includes battery-operated equipment and cameras, is prohibited. Mobile phones are permitted to be carried to the ship with prior permission of the port in switched off condition. Mobile phones are not to be switched on or used within the terminal area or the open deck areas of the ship.

3.6.3 Photographic and electronic equipment

The use of non-intrinsically safe electronic cameras, video equipment, mobile phones or any other electronic device is strictly prohibited in the terminal without prior approval.

3.7 Repairs while alongside (state of engine readiness, etc.)

3.7.1 Main Engine Readiness

Whilst alongside the Terminal, the tanker's main engines and related auxiliaries shall be kept in a state of readiness such that the tanker can leave under her own power in an emergency. Repairs and/or maintenance work to the main engines and related auxiliaries are prohibited.
In the case of a steamship this means that the turning gear be engaged, main steam stop valve closed with turbines sufficiently warm and condenser vacuum maintained commensurate with the engine manufacturer's operating instructions. For a diesel-powered ship this means that; fuel rail is under constant circulation and 'starting air' bottles are fully charged.
Whilst alongside the LNG berth, repairs and maintenance to the tanker's machinery and equipment shall be restricted to those items, which do not impair or limit the use of: -

(a) The fire detection or fire-fighting capability,
(b) The safe and efficient handling of the cargo,
(c) The propulsion system or manoeuvrability of the tanker,
(d) The integrity of the mooring system, and
(e) The safe operation of electrical equipment in gas dangerous zones

Testing Main Engines

Under no circumstances must a tanker's main engines be tested at any time whilst alongside the LNG berth until the loading arm(s) have been disconnected, shore or ship's gangway removed, and the tug(s) is/are secured alongside.

3.8 Provisions and stores (other craft alongside)

3.8.1 Ships Stores.

Facilities are available at the LNG berth for taking limited stores with prior permission of the port subject to compliance with the provisions of Port Security Facility Plan. All packages will have to be hand carried from jetty to ship deck via gangway. Storing is not permitted during LNG discharge operations. Stores can be arranged by boat at anchorage through agent.

3.8.2 Bunkering / Fresh Water

There are no bunkering / Fresh water facilities available at Hazira.

3.9 Safety data sheets

Liquefied Natural Gas is the only product unloaded at the HPPL/SEIPL terminal. The safety data sheet shall be available to pilot in CCR for reference.

3.10 Benzene and Hydrogen Sulphide (H_2S)

The hazard of these toxic gases is not relevant to LNG unloading. The use of high sulphur fuels alongside the jetty is not permitted.

3.11 Static accumulator

No bonding cable is required between the LNG Jetty and Carrier when berthed alongside. Electrical isolation is achieved between the Carrier and Jetty by insulated flanges on each of the Loading Arms.
The shore gangway is also isolated from the Carrier via non-conductive wheels at the landing point. Scheduled planned maintenance and testing of the insulation flanges ensures they remain working as designed.

4. GENERAL INFORMATION

4.1 Terminal location (description and maps)

Location of Berth: Latitude: 21° 06′ North / Longitude: 072° 37′ East
Port control building: Latitude 21 °, 05′37.9″ N Longitude 072 ° 37′34.6″ E.
State/Country: Gujarat, Republic of India.

Hazira (Surat) Port, often mentioned as just Hazira Port, is built by Hazira Port Private Limited (HPPL), a Shell Gas B.V (Shell) subsidiary.

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Bulk &General Cargo Terminal (namely four Multi cargo berths and two Container berths) have been developed south of turning basin, which is operated by AHPL (Adani Hazira Port Limited).

Hazira (Surat) Port is situated on the west side of the Hazira peninsula at approximately.
Latitude: 21° 06′ North, Longitude: 072° 37′ East.

Port limits:

North

Point	Latitude	Longitude
U	21° 07' 44"	72° 37' 53"
A1	21° 07' 42"	72° 36' 42"
A2a	21° 07' 42"	72° 35' 54"

West

Point	Latitude	Longitude
A2a	21° 07' 42"	72° 35' 54"
A2b	21° 06' 42"	72° 35' 00"
X1	21° 05' 00"	72° 35' 00"
X2	21° 05' 00"	72° 34' 00"
X3	21° 02' 00"	72° 34' 00"

South

Point	Latitude	Longitude
X3	21° 02' 00"	72° 34' 00"
X4	21° 02' 00"	72° 36' 00"
X5	21° 02' 30"	72° 36' 00"
X6	21° 02' 30"	72° 36' 42"
X7	21° 01' 59"	72° 36' 41"
X8	21° 02' 01"	72° 39' 03"
X9	21° 02' 40"	72° 39' 14"
X10	21° 02' 53"	72° 39' 25"

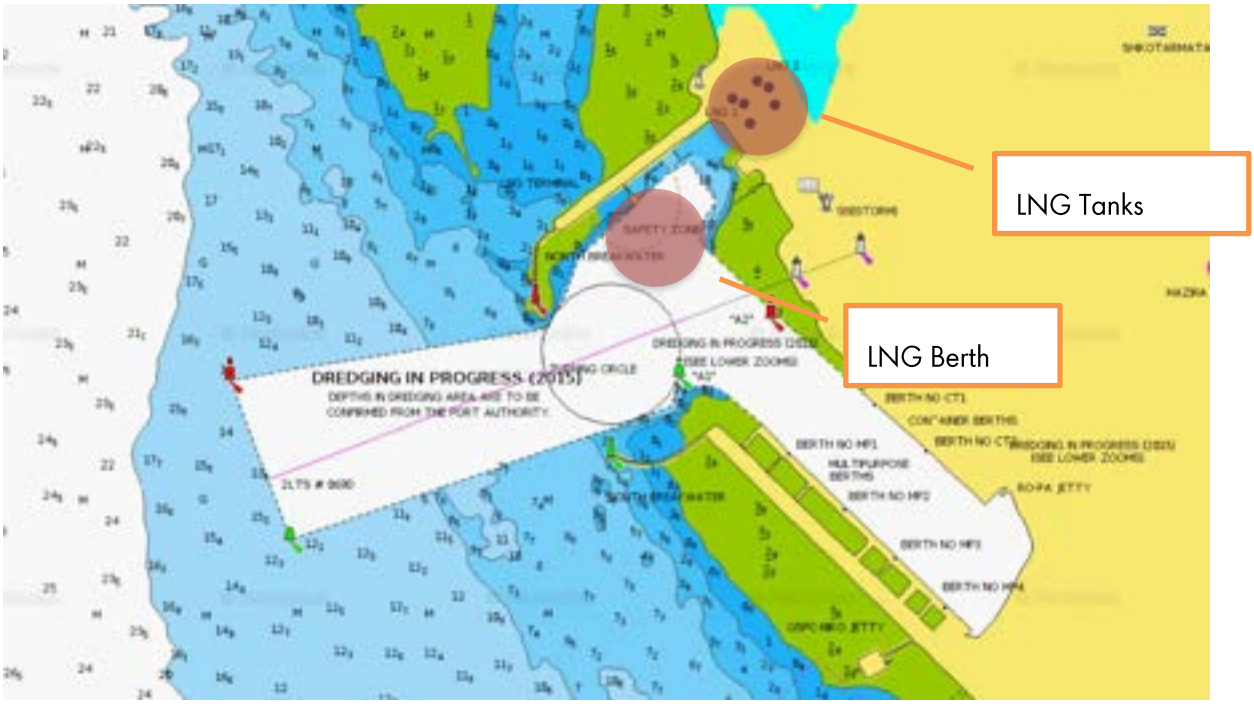
East

Point	Latitude	Longitude
X10	21° 02' 53"	72° 39' 25"
X11	21° 04' 48.384"	72° 39' 26.228"
A7	21° 04' 47.802"	72° 38' 52.197"
A8	21° 05' 22.485"	72° 38' 50.478"
B	21° 05' 05"	72° 38' 19"
C	21° 05' 10"	72° 38' 20"
D	21° 05' 27"	72° 38' 14"
E	21° 05' 36"	72° 38' 03"
F	21° 05' 59"	72° 37' 53"
G	21° 06' 02"	72° 37' 51"
H	21° 06' 07"	72° 37' 51"
I	21° 06' 11"	72° 37' 52"
J	21° 06' 17"	72° 37' 43"
K	21° 06' 21"	72° 37' 47"
L	21° 06' 27"	72° 37' 41"
M	21° 06' 32"	72° 37' 40"
N	21° 06' 39"	72° 37' 42"
O	21° 06' 42"	72° 37' 42"
P	21° 06' 47"	72° 37' 39"
Q	21° 06' 54"	72° 37' 37"
R	21° 06' 58"	72° 37' 35"
S	21° 07' 03"	72° 37' 45"
T	21° 07' 09"	72° 37' 54"
U	21° 07' 44"	72° 37' 53"

Charts: Indian Hydrographic Organization has published chart no. 2101 and 2034. Both these Indian charts are advised by DG (Shipping) to be carried by inward bound vessels
Vessels visiting the Port must have on board a sufficient range of current Hydrographic Charts relevant to the Area. These charts must be kept up to date with regards to Notices to Mariners and other Notices issued for the area.

4.2 Terminal layout (description and maps)

HPPL jetty is a single berth unloading facility for LNGCs. It is equipped with two liquid loading arms and one dedicated vapour arm. More details in the Section 5 Berth Information.



4.3 Hours of operation

The LNG berthing /unberthing operations are daylight hours +/-1 hours as DGS. The unloading activity is available 24X7.

4.4 Local time

Terminal follows Indian Standard Time zone: UTC +5 hrs 30min.

4.5 Vessel/shore communications policy

Vessels can always communicate with port control on VHF channel -69.
The terminal Loading Master will be in direct communication with the ship via terminal provided UHF radio and secondary backup system, Hotline telephone or EPABX phone lines are provided over the ship/shore fibre optic or electric link.
Terminal communications are conducted via closed coded UHF channels and the UHF handset is terminal provided.

Terminal PABX Phone Numbers

Ship to Terminal Control Room): HOTLINE OR EPABX NUMBERS 1213, 1239or 1206

Ship's Numbers EPABX from shore : 1220

4.6 Language spoken.

English is the official working language at the terminal. All communication with ship will be in English. Other local language commonly used are Hindi and Gujarati.

4.7 Vessel acceptance/clearance/vetting conditions

All the vessels nominated for the port of Hazira for loading or discharging operations should be of acceptable standards for operation at the jetties and be compatible in all respects with the jetty and the terminal.

Hazira accepts Gas Carriers of up to 30 years of age, subject to fulfilment of all Port and Terminal requirements.

All vessels between 25 years and 30 years of age will require express permission from the Gujarat Maritime Board through the vessel agent prior arrival.

Vessels calling at the terminal are required to be vetted to Shell STASCO standards and entered into the Global Maritime Assurance System (GMAS). GMAS vetting and clearance is not managed by the terminal therefore information and support should be sought directly from STASCO.

The vessel to be compatible with hazira terminal as per hazira berth parameters. The vessels Ship shore compatibility is assessed by the terminal basis the submission of the HPPL CL 001-Ship Shore Compatibility Questionnaire.The same can be obtained from port.

It is the responsibility of the vessel Master or ship operator to notify the terminal of any changes or modifications to the vessel which may affect ongoing compatibility.

The vessel will require two stages of acceptance:

1. Approved under Shell Group Maritime Assurance System (GMAS) for downstream vessels.
2. Approval: obtained from the Hazira Port after completing the Ship-Shore compatibility study and vetting process.

The vessel will be reassessed every call and re newed every 5 years.

The Port Manager reserves the right to revoke vessel compatibility

4.8 Useful telephone numbers

Refer to the Key Contacts section at the start of this manual.

4.9 Environmental (weather, tides, etc.) monitoring procedures

4.9.1 General.

The climate at Hazira is tropical and may be characterised by annually recurring seasons:

Period	Season	Characteristics
Mid Jun-Sept	SW monsoon	Winds mod-strong SW, Occasional cyclones
Oct-Nov	Interim period	Winds lighter, Occasional cyclones
Dec-Feb	NE monsoon	Winds light NE, effectively no cyclones

March-Mid June	Hot season	Winds mod-strong SW, May/June frequent mostly distant cyclones

4.9.2 Wind conditions.

The wind velocities presented below are based on statistical information. The prevailing wind direction is 250°. The following table summarises the distribution of wind speed. [10 minute means at 10 m above Mean Water Level]

Wind speed [knots]	December-March [NE monsoon] [%]	April-May [%]	June-September [SW monsoon] [%]	October-November [%]
< 6	95.5	83.1	86	97.3
7-16	4.2	16.2	13.4	2.2
> 16	0.3	2.7	0.6	0.5
Total	100.0	100.0	100.0	100.0

4.9.3 Cyclones

Between 1877 and 1982 [105 years] 8 cyclones hit the region, out of which 6 cyclones were of a severe nature, with wind speeds exceeding 24.2 m/s. This results in an average of one cyclone every 13 to 17 years [only the severe storms are counted].

4.9.4 Air temperature

Information regarding air temperature has been obtained from the nearby Surat airport. A summary of results are provided in the following table:

Month	Daily max [°C]	Daily min[°C]	Highest in the month [°C]	Lowest in the month [°C]
Nov, Dec, Jan, Feb	32	16	36	10
March, April, May	36	24	42	20
June, July, August	32	26	35	24
Sept, October	35	24	38	19

4.9.5 Tidal information.

A) Hazira Water levels -Astronomical Tide

B) Hazira Water levels -	Astronomical Tide
Highest Astronomical Tide [HAT]	CD + 8.68 m
Mean Higher High Water [MHHW]	CD + 6.96 m
Mean Lower High Water [MLHW]	CD + 5.84 m
Mean Sea Level [MSL]	CD + 4.19 m

Mean Higher Low Water [MHLW]	CD + 2.11 m
Mean Lower Low Water [MLLW]	CD + 1.37 m
Lowest Astronomical Tide [LAT]	CD – 0.32 m

Storm Surge

Cyclones were combined with a mean spring tide, which resulted in a maximum Still Water Level of CD +9.05 m.

Currents

The general pattern of the tidal currents in the approach channel of the Hazira port is as follows;

NEAP CURRENTS

Location	Flood	current	Ebb	current
	Maximum current [knots]	Direction [deg North]	Maximum current [knots]	Direction [deg North]
Channel entry	3.6	360	3.0	180

SPRING CURRENTS

Location	Flood	Current	Ebb	current
	Maximum current [knots]	Direction [deg North]	Maximum current [knots]	Direction [deg North]
Channel entry	4.8	360	3.6	180

5. BERTH INFORMATION

5.1 Berth description and parameters

LNG Berth details:

The berth of the LNG jetty is orientated 225 degrees north to minimize the anticipated downtime as a result of the combination of wind, waves and swell.

Number of LNG berths:	1
Minimum depth on berth	- 13 m CD
Product handled:	LNG

LNG Berth maximum vessel size limitations:

Capacity:	2, 17,000 cubic meters
Max. Displacement:	1, 47,000 metric tones
LOA:	317 meters
Minimum Parrallel Body	111 meters
Beam:	50 meters
Density	The water density in the harbour ranges from
1018 to 1024 kg	/ cum
Maximum Draft:	Maximum 11.5m for LNG-C and part laden Q
flexes,	
	Maximum 12.3m for fully laden Q-Flex
Ballast and slop reception:	None.

Vessels as small as 75,000 m3 could be safely moored depending on length of parallel side, and subject to the height of the manifold above the waterline remaining within the range of 18.0 to 26.0 m.

Berth throughput:

The cargo throughput capacity of the LNG berth is 11, 000 m^3/hr. The imposed flow limitation is 10,700 m^3/hr

Hoses/Arms

- Unloading Platform with 3 nos. Unloading arms (Chiksans), pipelines connecting the Storage tanks and Unloading Arms.
- Two nos. 16" ANSI liquid unloading arm and one no. 16" vapor arm.
- 2 Nos. LNG Storage tanks, various utility storage tanks for firewater and Diesel.
- Open Rack Vaporizers.
- Terminal Control Room for Monitoring unloading of LNG and send out Gas.
- 3 Nos. Gas Turbines and power distribution system.
- 3 nos. (Two liquid and One vapor), 16" LVL ANSI 150
- Liquid arms max flow rate 5500 m3/hr per arm.
- Vapor arm flow rate 11000 m3/hr. at -145 deg. C.
- Max Liquid arm pressure permitted: 10 Bar.

LNG jetty General description

The jetty consists of:

- Four breasting and five mooring dolphins fitted with fenders and quick release hooks (SWL 125T) , accessible by catwalks.
- An unloading platform with a concrete deck providing support for piping and equipment. Five lifebuoys with lines and IS SI Lights are located at strategic locations on the jetty and catwalks.
- A trestle to shore accommodating piping, cables and a roadway for personnel access and small vehicles. The trestle includes a Muster Point at its conjunction with the LNG Jetty. The trestle can further be used as an escape route away from the jetty towards the terminal.
- The LNG jetty is equipped with a mooring load monitoring system, a berthing aid system and an environmental monitoring system.

Unloading platform

The unloading platform provides support for the main and auxiliary equipment. Two remote operated fire monitors are installed on the tower, four fire monitors are installed at the corners of the Platform. These fire monitors are able to cover the complete loading arm area of the platform.

Breakwaters.

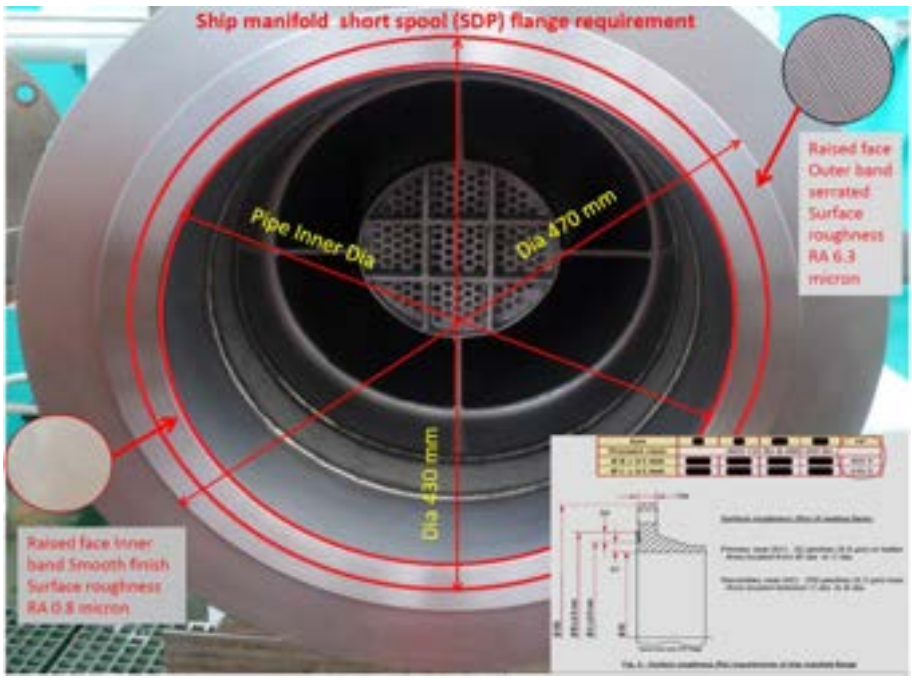
The breakwaters provide protection for the berth from the SW monsoon waves and swells and for the currents parallel to the coastline. The causeway provides access to the LNG jetty and is at such a level that flooding under design still water conditions is prevented.

Fire proofing/ cold splash protection.

All members above main deck level supporting the main piping are fireproofed. Additional cover is provided as cold splash protection to concrete and steel structures, which are in the immediate exposure to spills and critical for the stability of the jetty. Cracking of the concrete cover in the event of a cold splash and subsequent need for repair can be accepted. However, the structure is protected from failure of the concrete deck under an LNG spill.

5.2 Additional requirements

Vessels calling at Hazira (Surat) Port should preferably arrive at even keel with nil list. Departure conditions to be in line with the IMO requirements.
Vessel must arrive at Hazira port with 16" presentation flange with Short Distance pieces connected to two liquid arms and vapour arm. The liquid manifolds should be fitted with 60 mesh strainers. Vessels lines to be in cold condition. The cargo tanks are required to be at less than 120 mbarg. The flange face can either be Raised Face (RF preferred) as in diagram or Flat Face (FF) type but raised face with roughness as per attached file is preferred.



5.3 Other limitations (Including of minimum) of any kind.

Only the vessels declared compatible with Hazira Port after the requisite Compatibility & Optimoor studies and GMAS clearances are acceptable at the port.

5.4 Mooring arrangements and procedures.

The vessel will be moored as per the approved mooring analysis study carried out during the Ship Shore Acceptance process. Please refer section 6.1.8 for more details.

5.5 Presence of suspended silt in harbour waters

The port is located at the mouth of the river Tapi and subject to siltation. The silt carried in and out of harbour mixed with water is a regular phenomenon at the port in flood and ebb tide. Master should take precaution during ship transit and stay for silt present in water. It is suggested to use higher and seaward side suction during vessel stay at berth for various seawater intakes.Additional precautions may include regularly verifying sea suction filters, water ballast systems and other machinery using sea water. Fresh water flushing of pump bearings may be helpful.

6. PRE-ARRIVAL COMMUNICATIONS

6.1 Pre-arrival information exchange requirements from terminal to vessel and communications process

A) General.

All written and verbal communication at Hazira will be conducted in English.
To assist in planning and to satisfy contractual obligations the following prearrival messages are to be sent both to Hazira Port Control and the LNG Terminal. Messages should also be copied to the ship's agent. Should there be any changes to the foregoing which might have an impact on ETA's, the vessels performance or cargo equipment then both Hazira Port Control and LNG Terminal are to be advised immediately.
All communications should be sent by E-mail (preferred) or facsimile addressed to:

Hazira Port Control Fax no 0261 4151158 / 0261 4151041
Tel no 0261 4151165
E-mail hlpl-haz-portcontrol@shell.com
With Copy to: Ankur.Basu@shell.com ; GX-HAZ-HPPL-PILOTS@shell.com

Port control tower is manned round the clock on VHF channel 16 and 69. It is equipped with Radar, AIS VHF, and other communication and navigational equipment.

B) Standard message.

The port sends Standard message and circulars which has following minimum attachments.

1. Standard message. (To be completed and sent back to Port as soon as possible, format sent by the email in the pre arrival message)
2. PANS

The port must receive PANS in the prescribed format at least 96 hrs prior to the arrival of the vessel. If the voyage is shorter than 96 hrs, then it shall be submitted by the arriving vessel within 2 hrs of the departure from the last port. It also applies to vessels trading in coastal waters or coasting between Indian ports.
Ships calling on Hazira (Surat) Port facility shall also submit this information to:
Coastguard regional headquarters (West), MRCC Mumbai.

TEL:+91(022)24388065
Telefax: +91(022)24316558
e-mail: indsar@vsnl.net, wncmocmb-navy@nic.in
Inmarsat C (IOR) 441907210
Inmarsat Mini M (IOR) 762882349

C) On departure from Load port.

AA. Ship's name & call sign
BB. Departure date & time.
CC. ETA and arrival draught at Hazira.
DD. Bill of Lading details and other cargo information.
EE. Any known deficiencies affecting port performance

If the ETA deviates more than 12 hours from that initially advised on departure and/or there are any changes to DD, EE or FF then Port & Terminal must be advised.

D) 72 hrs prior to arrival.

AA. Ship's name & call sign.
BB. Update ETA

E) 48 hrs prior to arrival.

AA. Ship's name & call sign
BB ETA and Arrival Draught

CC Estimated cargo tank temperatures and tank pressure

DD Confirm the following have been tested and/or are fully operational:

1. Navigation, mooring, safety & engine systems.
2. Cargo system & boil off control systems.
3. Gas detection systems
4. ESD system, alarms, and interlocks
5. Cargo tank high level alarms
6. High- & Low-pressure alarms
7. Remotely operated valves
8. Cargo lines are free of oxygen.
9. No tank leakages.

If the ETA changes by more than 6 hours following the issue of the 96-hour message and before sending the 24-hour message, then the revised ETA must be advised to the Port.

F) 24 hrs before arrival.

AA Ship's name & call sign
BB Confirm ETA.
CC Send pratique message via ship's agent
If the ETA changes by more than 2 hours after sending the 24-hour message, then the Port must be advised of the revised ETA

G) 12 hrs before arrival.

AA Ship's name & call sign.
BB Confirm ETA

H) VHF contact with Hazira port.

VHF Contact with Hazira Port Control should be established on VHF Channel 16/69 at the earliest opportunity in order to obtain information on berthing, weather and availability of pilot.

I) Departure communication.

On Departure from Hazira Port

AA. Ship's name & call sign

BB. Outstanding Port Log items

J) Documents required:

1.Customs Authority.

- Original Last Port Clearance
- Maritime Declaration of Health- 3 Copies
- Vaccination List- 3 Copies
- Voyage Memo (Ports called in last 30 days or last 10 ports of call) with arrival and departure dates and security levels)- 3copies
- Bills of Lading, Cargo Manifest and Transit Cargo if any - 1 Copy
- List of Ships Stores Including Bonded Stores and Deck Store- 3 copies
- Personal Effects Declaration with Crew Currency- 3 Copies
- Ships Currency Declaration- 3 Copies
- Nil List (If there are no Passengers, Stowaways, Animals, Arms, Ammunitions)- 3 copies
- List of Narcotic Medicines- 3 Copies
- Crew List (Name, Rank, nationality, Passport Number, Seamen book number, Date of and Place, Place of Embarkation)- 7 Copies
- Following Statutory Certificates- 2 Copies Each

1. Ship Registry Certificate,
2. ISPS Certificate
3. International Load Line Certificate
4. Cargo Ship Safety Equipment Certificate
5. Cargo Ship Radio Certificate
6. Cargo Ship Safety Construction Certificate
7. International Oil Pollution Certificate
8. Ship Sanitation Control Exemption Certificate

2. Quarantine Authority

At Hazira, the customs-boarding officer usually gives quarantine (Free Pratique) But if the vessel is coming from Yellow Fever area, Port Health Officer from Kandla will board the vessel.
Following set of documents are required any ways-

- Crew List- 1 Copy
- Maritime Declaration of Health- 1 Copy
- Vaccination List- 1 Copy
- Ship Sanitation Control Exemption Certificate - 1 Copy

3. Immigration Authority

Custom Authorities are clearing the vessel on behalf of Immigration.
For Foreign Nationals Sign on and Sign off a 48 hours' notice with confirmed air ticket is required.
Ships Agent will have to get Landing permission from the local police.
For Indian National this above is not applicable.
Documents required in case of Crew Change (Foreign or Indian national)-

- Crew List – 1 Copy
- Personal Effects Declaration- 1 Copy
- Sign/Sign off crew passport- 1 Copy

4. Port Authority (Hazira Port Private Limited)

Following Documents required by Port Authority-

- Bill of Lading, Cargo Manifest, Transit Cargo List
- Crew List
- Vessel's particulars
- Following Statutory Certificates

1. Ship Registry Certificate,
2. ISPS Certificate
3. International Load line Certificate
4. International Tonnage Certificate
5. Certificate of Class
6. Cargo Ship Safety Equipment Certificate
7. Cargo Ship Radio Certificate
8. Cargo Ship Safety Construction Certificate
9. International Oil Pollution Certificate
10. Ship Sanitation Control Exemption Certificate
11. Certificate of Entry and highlight clause indicating wreck removal & oil pollution covers
12. Certificate of Insurance or Other Financial Security in Respect of Liability for the Removal of Wrecks
13. Medical Chest Certificate

5. The following documents are required by the Hazira LNG terminal for Cargo Clearance

- Sale and Purchase Agreement or detailed contracts
- Original Bill of Lading
- Commercial Invoice
- Certificate of Origin
- Certificate of Quality
- Certificate of Quantity
- Load Port Ullage Report (Pre and Post Loading)

Last 3 documents will require signature of independent surveyor.

Other documents will be prepared and given by importer in consultation with CHA.

6.1.2 Water depths (channel and berthing pocket(s)); controlling depth/maximum draft

The depth at the LNG jetty is such that the LNG carrier is able to leave the berth for all water levels and remain in berth pocket under all tidal conditions (Including LAT). The depth at the berth pocket is CD-13 m

6.1.3 Under keel clearance

The depths at approaches to port, navigation channel, entry to port and berth pocket are maintained in order to provide following under keel clearances at all states of tides.

- Approaches to Port, Navigation Channel and Port entrance: More than 15% of the deepest draft of the vessel.
- Turning circle: More than 10% of the deepest draft of the vessel.

- Berth Pocket: More than 1.0m.

6.1.4 Pilotage procedures/anchorage

Pilot boarding location: Latitude: 20 deg 54' North, Longitude: 072 deg 35' East.
The Hazira (Surat) Port pilot will board the LNG carrier well south of General Lighterage Area as a precautionary measure to pass vessels at anchor in the General Lighterage Area with pilot on board.
Hazira Port Control will be listening on VHF Channel 16 and 69. VTMS (Khambhat East) is listening on VHF Channel 16 and 09.
Port approaches through Magdalla Port waters
The LNG carrier approaches the Hazira (Surat) Port through the Magdalla port waters. Ships bound for Hazira will have to report to VTMS (Khambhat East) on channel 09, two miles south of the Magdalla Port Limits. The Hazira (Surat) Port pilot will board the ship just outside the Magdalla Port waters. Strong tidal currents are present in the channel in North and South directions. There are no crosscurrents. The Malacca banks act as a natural breakwater for waves and swells during low water but at high water waves and swell pass unrestricted over these banks. During strong SW monsoon conditions and at high water the waves in the Hazira approach can be as high as 2 meters coming from a 250 degree- direction.

LNG carriers passing through the Magdalla (surat) port.
During the transit of the LNG Carrier from the open sea to the Hazira LNG terminal the LNG Carrier is exposed to the same operational risks as any other ship of similar size, however the consequences of severe structural damage to the LNG Carrier will be far more serious than those of similar incidents involving other types of ships and in order to reduce the risk of an incident involving the LNG carrier passing through the Magdalla (Surat) Port.

The dry bulk General Lighterage co-ordinates are:

- 21.02.0 N, 072.34.5 E,
- 20.59.0 N,072.34.5 E,
- 20.59.0 N, 072.36.5 E,
- 21.02.0 N, 072.36.5 E

All ships engaged in lighterage operations are instructed to only anchor in this area.
The one-mile-wide corridor between the General Lighterage Area and the Malacca Banks will be used for the safe passage of the LNG Carrier to the Hazira (Surat) Port as well as for tankers proceeding to and from the Reliance SPM. The passage is also used by all vessels bound from / to AHPL. Only one vessel is allowed in this corridor at one time. Magdalla Port Control through VTMS (Khambhat East), should be informed by Shell LNG Tankers and Reliance's Tankers, and latest traffic position should be taken before proceeding to North of General Lighterage Anchorage.

The LNG Carriers/Tankers will inform the Magdalla Port Control of its expected arrival time at the corridor and request passage approval.
All vessels following LNG tankers shall keep behind, such LNG Tankers at a safe distance of not less than 1 NM. Similarly, LNG tankers following other vessels ahead of her shall keep a safe distance of at least 1 NM, behind such vessel.
A Port tug will escort the LNG Carrier when passing the General Lighterage Area advising other traffic to keep clear or to assist the LNG carrier to turn in case of an emergency.

The non – LNG tanker anchorage coordinates are:

(A)	21* 06.0′ N	072* 35 0′ E
(B)	21* 06.0′ N	072* 33.5′ E
(C)	21* 05.0′ N	072* 33.5′ E
(D)	21* 05.0′ N	072* 35.0′ E

Port entry will be done with a minimum of three tugs attached. There can be strong, tidal, cross currents in the dredged channel. The pilots will be assisted with a PPU, Personal Pilot Unit. Visibility limitation is 0.5nM

An entrance channel connects the port with the deep water of the Sutherland Channel. The dredged depth of - 13-meter CD. The straight approach channel has a clear width of 700 m at the seaside tapering off to a width of 470 meter between the breakwaters to allow unobstructed easy entrance/departure of ships. The orientation of the approach channel is heading 070 - 250 degrees north.
The port contains a turning basin with a radius of 300 meter for the manoeuvring of Tug assisted LNG-Carrier during berthing and un-berthing

Hazira (Surat) Port Anchorage.

Ther are no assigned anchorage for LNG vessel. The recommended anchorage is in a location approximately 11 miles SW of the harbour, outside the Magdalla Port Limits, where the sea bottom is sand and is of good holding ground. Anchoring is prohibited within Port Limits unless the anchor is used temporarily to support vessel manoeuvering or in case of an emergency.

In case the LNG Carrier is required to wait or anchor it will do so outside the Magdalla Port Limits. Only in case of an emergency will the LNG Carrier anchor in the Magdalla Port Waters at a safe location as indicated by the Magdalla Port /VTMS (Khambhat East). All traffic will be instructed to give the LNG Carrier at anchor a wide berth. Due to its large size above and under water the LNG Carrier is more likely to drag anchor in strong SW monsoon winds and in the strong currents in the Sutherland Channel.

6.1.5 Limiting conditions for vessels at LNG berth

If the (actual) wind speed registered by the Meteocean Oceanographic System reaches above 30 knots, stand by tug will be requested to come alongside the tanker, after unloading has stopped.
If the (actual) wind speed registered by the Meteocean Oceanographic System reaches above 35 knots, loading arms to be disconnected and stowed and gangway removed, tugs alongside the tanker, discuss situation with the Master.
In the event that wind speeds exceed 40 knots, the Master and Pilot after discussion, and taking due account of the mooring loads as shown by the Mooring Load Monitoring System, may decide to vacate the berth. (Mooring forces will be due to a combination of wind and waves. Wind speed, on its own, is therefore not the determining factor).
As noted above, given the prevalent relatively benign sea conditions at the jetty, operations should not be routinely affected. Nevertheless, vessels should prepare to vacate the berth if the estimated

wave height exceeds 1.5 m with a wave period (time of peak-to-peak passage) of 9 seconds at the jetty.
Such a decision of unberthing may be taken earlier considering the prevailing and forecasted weather.
Cargo operations should be stopped during electrical storms in the vicinity of the ship or terminal if the tank pressures on the vessel or ashore are so high that there is a possibility of venting of flammable cargo vapor from any end.
"WIND" refers to the 'mean' wind speed, which is defined as the 10-minute average wind speed as measured at the Terminal's weather station anemometer.

6.1.6 Tug requirements

The port is equipped with:
5 ASD tugs (operated by AHPL).
A minimum of three tugs are required for LNG vessel movements.
Three tugs are made fast to the vessel using tug's line as follows:

- One tug at aft centre lead on deck (not on sunken bitt).
- One tug each at port and starboard shoulders at sunken bitts, in case sunken bitts are not within reach, both tugs will be made fast on main deck.

The tugs use their own towing lines. Good messenger lines are required for taking the tug's line.

6.1.7 Vessel displacement and dimensional limitations per berth

Refer Section 5. Berth Information

6.1.8 Minimum mooring requirements per berth and typical mooring diagrams per berth

Description:

800 mtrs Long Trestle.
Mooring dolphins (MD1 to MD5) - 5 nos. with 3 hooks of 125 tons each.
Breasting dolphins (BD1 to BD4)- 4 nos. with 2 hooks of 125 tons each.

Preferred berthing of the LNGC is starboard side alongside. Once the vessel is at close distance, contact with shore is made by heaving line thrown by vessel to jetty. Mooring crew connects the shore messenger line to the heaving line. Vessel's lines are passed ashore one by one using this messenger line starting from springs, breast lines and head/stern lines. This contact must remain established for entire mooring period with help of longer heaving line.
No lines to be tightened (except slack) until the mooring crew are clear of the respective mooring or breasting dolphins.

Fire wires are not required at Hazira.

A) Mooring configuration:

Forward - 3 Headlines, 3 Breastlines.2 Springs.
Aft - 2 stern lines, 2 Breast lines, 2 Breast lines, 2 springs.
OR
- 3 stern lines, 3 Breast lines, 2 springs.

Depending upon the Optimoor study of the vessel at Hazira berth.

6.1.9 Line handling procedures

Mooring boats are not used at the Terminal. All moorings will be passed from ship to shore using a combination of ship's heaving line and shore messenger on an endless loop. This mooring procedure requires close co-operation between ship's crew and shore mooring gang to ensure a smooth and safe mooring operation.
Ships must have a sufficient supply of good quality heaving lines of sufficient length to reach the furthest dolphin as per the agreed mooring plan. The port will provide the messenger lines.
Only after the vessel has been positioned and is being held alongside the berth by the tugs, should mooring lines be passed to shore. The method by which this is to be accomplished is shown in Appendix 3 at the end of this section. The sequence of mooring (where applicable) is as follows: -

- Forward and after back springs. BD 1 or BD 2 and BD 3 or BD 4
- Breast lines forward and aft to MD 2 and MD 4.
- Breast lines aft to MD 3.
- Head and stern lines to MD 1 and MD 5.

All heaving lines for the forward and aft moorings should be passed to breasting dolphins BD1 and BD4 where they will be attached to the messengers by the shore mooring gang. The messenger can then be hauled on board the vessel and secured to the appropriate mooring line. Only one mooring line should be attached to the shore messenger. Attempting to secure more than one mooring line on a single messenger is unsafe and will only extend the time taken to complete the mooring operation. In the interests of safety and until all mooring lines have been passed to a particular dolphin, it is extremely important that the ship's crew do not heave on any mooring lines until the Line handling Supervisor has confirmed by radio to the pilot that all shore personnel are clear of the mooring dolphin concerned.
When unmooring under normal circumstances mooring lines will be released and recovered by the ship starting with outer mooring dolphins, forward and aft (MD1 & MD5), with back-springs being the final lines to be released. Mooring lines to be released must be slacked down into the water before the shore mooring crew will release the hook. Once the line has been released the pilot will be informed by radio and will confirm with the ship's Master that it is safe to recover the mooring line. On no account must ship's crew heave on mooring lines until they are advised to do so by the Pilot.

6.1.10 Berthing manoeuvres/approach speeds

Berthing aid systems:

The approach of vessel is monitored by Laser docking system, whose display is located near MD 3.

- Green Safe speed 0 to 8 cm/s.

- Amber Cautionary speed 8 to 10 cm/s.
- Red Dangerous speed Above 10 cm/s.

6.1.11 Garbage and slops disposal procedures

The Port offers garbage reception facilities to vessels utilizing Port facilities.
The facility can be availed by booking waste disposal vide DG Shipping waste management website (http://prf.irclass.net/) and on acceptance by the garbage disposal vendor. The local agent can used for registering on the DGS site.
Ship Masters are advised to contact the ship agent directly for garbage landing. Agent will guide the vessel for required formalities through DGS portal.
The Port is required to comply with strict garbage disposal regulations and users are advised to adhere to following guidelines as described below.

a) Prior intimation to and acceptance from port authority is essential for waste disposal.
b) The custom permission through agent is required for Garbage disposal.
c) All garbage is to be handled by the ship's crew till designated area at Jetty head.
d) All the wastes must be packed in leak proof bags/containers.
e) The transfer of garbage from ship to shore should commence after customs clearance from the customs and before commencement of cargo.
f) At no point the garbage should be left unattended during the transfer.
g) All garbage must be properly segregated and marked as per categories.

6.2 Pre-arrival information exchange from vessel to terminal as per ISGOTT

An information exchange between vessel and terminal is required as per ISGOTT. The terminal Ship Shore Interface Booklet (SSIB) will be sent by e mail prior arrival by the pilot. The vessel Master is required to complete Page 14 of SSIB and return the form prior to scheduled berthing.

7. OPERATIONAL INFORMATION

7.1 Gangways

Access to the vessel will be via the terminal gangway which will be landed aft of the ships manifold immediately after vessel is all-fast. Ship's personnel will be required to assist in this operation with respect to the best placement of the gangway on board the vessel.
The terminal gangway is self-adjusting and able to travel throughout all tides and freeboard of compatible vessels. When adjusting, the red light will flash temporarily. It will freewheel with the ship's change in draft and tide and has the same operating envelope as the loading arms.

No ropes shall be attached to the gangway so that emergency retraction is not restricted but thin plastic danger tape may be used to highlight potential danger zones. When the gangway is on board, a crew member is required to keep a continuous gangway and security watch and advise the pilot should any adjustment be required to avoid damage to, or any problems with the gangway.

7.2 Pre-transfer conference policy

Before commencement of unloading operations for pre transfer conference,the Loading Master will meet with the appointed ship's officers (responsible for the cargo operations) and agree on the unloading plan and procedure. The pilot will facilitate the meeting proceedings. The pilot with a ship's appointed officer will do a safety walk around the ship on completion of the meeting to assess unloading readiness.

7.3 Ship/Shore Safety Checklist and declaration of inspection (including shift relief policy)

A Ship Shore Safety Checklist will be completed jointly by the Responsible Ship's Officer and the Loading Master (Pilot) following the pre-discharge meeting and safety inspection. The Safety Checklist must be agreed, completed and signed by both ship and shore representatives prior to the start of any cargo operations. Follow-up safety checks will be conducted at agreed intervals not exceeding 6 hours throughout the vessel stay and the checklist will be signed accordingly. While the Pilot is on board the ship, his/her role is to assist in communications or advise on operational matters.

7.4 Ballasting policy

Port does not have facilities for receiving dirty ballast and slop. The vessels to comply with their ballast water management plan.

7.5 Loading arm connection and disconnect/draining procedures

Terminal staff will board the vessel for connection/disconnection of loading arms and manoeuvre the loading arms onto the manifold staging area. Checks are performed on the loading arms and the ships SDPs are inspected for compatibility, cleanliness and damage. SDP flanges must be scratch/dent free. Prior to connection the ships liquid header must be drained of all liquid. Ship's crew are requested to keep well clear of the loading arms during connection.

After the arms are connected, the line is purges to less than 1% by Vol O2 and the pressure tested to 6 barg Nitrogen pressure for liquid lines and 2 barg nitrogen for vapour lines.
The mechanical jacks of the arms are placed after completion of cool down.
Draining and purging shall be completed in accordance with the terminal's procedure till LEL reading <2% vol or lesser.
On completion of draining and purging of the liquid and vapour loading arms, the arms will be disconnected by the terminal operators.

7.6 Cargo transfer policy (including manning requirements)

It is expected that vessels will have established minimum safe manning requirements for cargo operations. These requirements should be strictly adhered to. All vessels unloading at the terminal must be able to demonstrate a plan to comply with STCW Code Section A-VIII/1 – Fitness for Duty, for marine personnel. All shore personnel must respect the rest requirements for the ship's personnel and the vessels fatigue management policy. Shore personnel must be aware that there are only limited persons on board who manage a ship that is in continuous operational.
Terminal staff fatigue is managed by a rotational roster system with staff working in shifts.
Control rooms and deck/jetty should be always be manned suitably to manage routine operations and emergencies. No personnel should be close to the manifold during the unloading operations.

Cargo handling.

The Pilot stays on board the ship for the entire stay of the vessel. He also takes the responsibility of Loading facilitator.
The maximum permitted cargo throughput capacity of the LNG berth is 11, 000 m^3/hr. The cargo is generally unloaded at the rate of 10,700 m^3/hr so that the maximum permissible throughput capacity is not exceeded at any time due to surges or uneven flow in individual arm.

7.7 Vapour recovery

Vapour recovery is not applicable at this terminal as the terminal only unloads cargo.
For the unloading operation vapour return line is connected to the shore vapour return line and pressure is maintained by free flow.

7.8 Crude Oil Washing (COW)

NA for LNGC

7.9 Safe operations requirements (wind, lightning, tide, current, waves)

The limiting arrival and departure conditions are as follows: -

• Maximum current in the approach channel at one ship's length outside the breakwaters is 2.0 knots. • Minimum UKC shall not be below 15% of the deepest draft in the channel, not below 10% of the deepest draft in the turning circle and not below 1.0 meter at the berth.
• The concluded limiting wave height is Hs = 1.5 m in combination with a wind speed of 12 m/s [10-minute average wind speed] (Gusting to 14 m/s).
• For all fully laden Q Flex arrivals; approach must be with Ebb current during monsoons. Part laden Q flex can also arrive in flood current.

• For departure, Current outside breakwater must be less than 2 knots during reducing flood flow, less than 1.5 kts during reducing ebb flow and less than 1 knot during increasing (flood or ebb) flow.

7.9.1 Safe off-loading

If the (actual) wind speed registered by the Meteocean Oceanographic System reaches above 30 knots, stand by tug will be requested to come alongside the tanker, after unloading has stopped.

If the (actual) wind speed registered by the Meteocean Oceanographic System reaches above 35 knots, loading arms to be disconnected and stowed and gangway removed, tugs alongside the tanker, discuss situation with the Master.

In the event that wind speeds exceed 40 knots, the Master and Pilot after discussion, and taking due account of the mooring loads as shown by the Mooring Load Monitoring System, may decide to vacate the berth. (Mooring forces will be due to a combination of wind and waves. Wind speed, on its own, is therefore not the determining factor).
As noted above, given the prevalent relatively benign sea conditions at the jetty, operations should not be routinely affected. Nevertheless, vessels should prepare to vacate the berth if the estimated wave height exceeds 1.5 m with a wave period (time of peak-to-peak passage) of 9 seconds at the jetty. Such a decision of unberthing may be taken earlier considering the prevailing and forecasted weather.

Cargo operations should be stopped during electrical storms in the vicinity of the ship or terminal if the tank pressures on the vessel or ashore are so high that there is a possibility of venting of flammable cargo vapor from any end.

"WIND" refers to the 'mean' wind speed, which is defined as the 10-minute average wind speed as measured at the Terminal's weather station anemometer.

The off-loading limits are as follows :-

- Stop Unloading at 30kts
- Disconnection of unloading arms at 35 kts.
- Consider unberthing at 40 kts

Safe unloading limits for swell is less than 1.5m with period of less than 9s from S-SSW direction
Cargo operations should be stopped during electrical storms in the close vicinity of the ship or terminal if the tank pressures on the vessel or ashore are so high that there is a possibility of venting of flammable cargo vapor from any end.

7.10 Tank cleaning and tank entry policy

Tank cleaning and entry is not permitted while the vessel is at berth.

7.11 Inert gas systems policy

Not applicable

7.12 Surveyors/sampling and gauging

Survey is carried out by 3rd party surveyor. Opening and closing CTMS must be done in the same process condition.
The opening measurements shall be taken before commencement of unloading. Closing CTS will be taken after completion of draining of ship's lines and shore loading arms. The vessel should have calibrated gas flow meter on BOG pipeline .

Surveyor will comply with all safety norms and regulations on board the vessel and terminal requirement while working in terminal.

7.13 Bunkering policy

Bunkering facility is not available at the facility and neither bunker is permitted at berth.
There are no bunkering facilities available at Hazira LNG berth.
The internal transfer of bunkers on board ship whilst in the Port and alongside the Terminal's jetty is strictly prohibited.

7.14 Pollution prevention (sea suction valves, stack emissions, scuppers, pre-boom, noise, etc.)

All safeguards must be taken to prevent pollution of the port and its adjacent waters. Without limitation, the information in this section shall be complied while the ship is within the port limits.
Masters must ensure that their crews are aware of the anti-pollution requirements of the port.
Any pollution by the ship must be reported (as per legislative requirements) immediately to the Indian Coast Guard and the pilot on board. Immediate steps must be taken to stop the cause and limit the extent of the spill.
Detergents, soaps, or shampoos used in washing machines, galleys, showers and other devices, where used water is unable to be held on board must be environmentally friendly.
Bilges and other spaces likely to be contaminated with oil residues or other pollutants must not be pumped to sea.
Soot blow and excessive dark smoke is prohibited within the port limits.
If rainwater accumulates on the ship's deck it must be drained through the scuppers with an absorbent pad (like those used in pollution prevention equipment) as a filter to prevent any oil or debris from entering the scupper.Ships with rainwater tanks installed may use them to collect rainwater.The procedure for draining water should be agreed in the ship shore safety checks.
All flanged joints necessary to connect loading arms to the ship, e.g. reducing pieces/spools will have full bolting with the largest possible bolts to fit through the flange holes.
All overboard bilge water discharge/sea valves and emergency bilge suctions, will be closed, lashed and sealed during loading operations. Emergency bilge suction must also be secured and tagged. The ease of opening this valve in an emergency should not be compromised.
All bunker tanks must be double skinned.

7.15 Potable water and stores

There are no bunkering or potable water facilities available at Hazira LNG berth. Facilities are available at the LNG berth for taking limited stores with prior permission of the port subject to compliance with the provisions of Port Security Facility Plan. All packages will have to be hand

carried from jetty to ship deck via gangway. Storing is not permitted during LNG discharge operations. Stores can be arranged by boat at anchorage through agent.
While supplying limited provisions at LNG berth, following shall be adhered to :-

- Ensure that proper PPE for each. – FRC, Googles , Safety shoes, gloves etc.
- The item shall be packet in not more than 5 kg leak proof bags to hand carry with one hand holding the rails of gangway.(any violation of safety rules will lead to immediate stoppage of work and all items returned).
- The items shall be loaded on ship before commencement of cargo unloading.
- Storing to commence as per custom permission.
- No mobile or electronic item shall be carried by the workers involved
- No residues of supply items to be left back on jetty.
- Agent to take care of workers fatigue ,rest and hydration requirements.
- Agent to adequately brief the safety requirements to workers.

7.15.1 Medical facilities.

Multi-speciality hospitals are available 45 minutes from the terminal whose facilities can be used through the ship's agents. Terminal has a site medical centre for first aid and urgent basic medical assistance, if required.

7.16 Fishing.

Fishing within the LNG Security Zone is prohibited at all times. This includes fishing from the Terminal jetty, foreshore, and marine craft or from LNG tankers berthed alongside.

7.17 Port Tariffs and Charges;

Port charges are levied for the use of the Port facilities and the provision of pilotage and tug services as well as berth hire. Port Charges are payable in advance. Following tariffs are in force for the Hazira (Surat) Port:

- Port Dues : Payable to Adani Hazira Port Ltd.
- Pilotage and Towage Charges: Payable to Adani Hazira Port Ltd.
- Berth Hire Charges for LNG berth: USD 0.047/GRT per slot of 8 hours payable to Hazira Port Pvt.Ltd.

The above tariffs are exclusive of any Indirect Taxes (including GST). If any Indirect tax (including GST) is leviable or assessed to be levied upon HPPL with respect to the above tariffs, the same shall be charged to the LNG ship in addition to the above tariffs.
Since Hazira is a Tidal port and operations are restricted to daylight hours, LNG vessels are sometimes constrained to be at berth awaiting tide / daylight hours for departure.
Port will advise vessel agents to deposit advance monies in an account based on the number of berth occupancy slots as applicable as per allowed lay time. Following completion of unloading, based on actual time consumed at berth, if required, HPPL will issue final invoice and adjust against advance received.
If the vessel completes operations within the allowed laytime and is waiting at berth for daylight and / or favourable tide, HPPL will not charge extra berth occupancy charges.
If the vessel exceeds allotted berth slots due to Vessel / User / SEIPL fault, vessel will be charged additional slots for the extra stay at the berth.

7.18 Reference.

The port and Terminal have following fully developed emergency response plans.
Port emergency response plan.
Oil spill response plan.
LNG Terminal emergency response plan.

8. APPENDIX

8.1 Important Telephone numbers.

Port and Terminal Company

Name	Contact number	E-mail address
Dhirendra Mishra, Terminal Manager	+91 261 415 1001 +91 261 415 1009	dhirendra.mishra@shell.com
Ankur Basu. Port Manager/Harbour Master, PFSO	+91 261 4151301	ankur.basu@shell.com
Sanjeev Tomar, DY.PFSO	+91 261 4151302	Sanjeev.tomar@shell.com
Ajith Kottyl, Pilot	+91 261 415 1304	Ajith.Kottyl@shell.com
Prashant Shetty, Pilot	+91 261 4151303	prashant.shetty2@shell.com
Bhairu S Bhati, Operations Manager	+91 261 415 1201	Bhairu-Singh.Bhati@shell.com
Hazira Port Control	+91 261 4151165	hlpl-haz-portcontrol@shell.com
Fascimile	+91 0261 4151158	
Terminal Control Room (24 hrs Emergency Control Centre)	+91 261 4151206 +91 261 4151207 +91 261 4151239 +91 261 4151213	
Shift Ops Supervisor	+91 261 4151206	

8.2 Hospitals/Clinic.

S.no.	Name	Telephone
1	Adventist Meta's hospital	0261-3047108
2	BAPS Pramukh Swami hospital	0261-2781000
3	Adventist Meta's Wockhardt hospital (Cardiac care)	0261-6694444, 9825378311
4	Apple Hospital	0261-2310703; 987961271
5	Tri star hospital	0261-2200000
6	Mahavir trauma hospital	0261 - 4082020
7	Mahavir Cardiac Hospital	0261 - 2462116
8	Sunshine global	0261-4111000
9	Care Hospital	0261 – 3927777
10	New Civil Hospital	+91 261 2244985 +91 261 2244456 – 59 +91 261 2233322 +91 261 2244456

8.3 Surat District Administration,GMB & Police

Name	Contact Numbers	Email
Police Control Room	+91 261 100	
District Disaster Management Center	+91 261 2465118	
City Fire Control Room	+91 261 101	
Gujarat Maritime Board, Surat Magdalla (Surat) Port, Gujarat Maritime Board, Surat – 395003	+91 261 2470533	pomagdalla@gmail.com
	+91 261 2463781	
	+91 261 2479111	
	Fax:+91 261 2475645	