EXCELERATE ENERGY

PETROBRAS TRANSPORTE S.A.
TRANSPETRO

TMS-TRBA-010-A02

TRBA Terminal Manual Annex 02

STS Checklists

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Contents

1. Instructions

This Annex to the TRBA Terminal Manual includes all the checklists required to be completed by the FSRU and Visiting LNGC for a LNGC STS Discharging Operation alongside the FSRU at TRBA.

Checklists maybe completed electronically with the use of Electronic Signatures if deemed acceptable by the FSRU and LNGC SMS requirements. There is no requirement for the checklists / forms within this Annex to be stamped by either the FSRU or LNGC.

The following checklists shall be completed as part of this Annex:

Checklist To Be Completed	Order of Completion	Completed By	
		LNGC	FSRU
ISPS DoS (Separate SSP Form)	During Pre-Transfer Meeting	√	√
TRBA Terminal Safety Letter	During Pre-Transfer Meeting		√
Communication Agreement	During Pre-Transfer Meeting	One Document - Together	
Cargo Handling Agreement	During Pre-Transfer Meeting	One Document - Together	
LNGC / FSRU Safety Checklists (ISGOTT)	During Pre-Transfer Meeting	One Document - Together	
STS Checklist No.6 (SIGTTO)	During Pre-Transfer Meeting	One Document - Together	
STS Checklist No.6A (SIGTTO)	During Transfer		

The pre-transfer meeting shall be conducted at the first opportunity after the vessels are securely moored alongside each other following the above chronological order. No transfer activities shall commence until all parties have discussed and agreed upon the procedures to be followed and that safe conditions have been established.

It shall be noted that the FSRU is not obliged to complete or sign any LNGC SMS Specific Checklists or Forms of which the contents have already been covered in the Pre-Transfer Meeting as detailed in the Checklists contained within this Annex. Section 11 of the Cargo Agreement can be utilized to cover any additional operational requirements which may not have been covered.

Where elements of a checklist are to be acknowledged by an individual(s) then Initials shall be used of the individual(s) completing the check rather than a simple tick or cross.

2. TRBA Terminal Safety Letter

LNGC Name: _____

Dear LNGC Captain,

Responsibility for the safe conduct of operations whilst your ship is at this terminal rests jointly with you, as master of the ship, and with the responsible terminal representative. We wish, therefore, before operations start, to seek your full co-operation and understanding on the safety requirements set out in the LNGC / FSRU Safety Check List which are based on safe practices widely accepted by the oil and the tanker industries.

We expect you, and all under your command, to adhere strictly to these requirements throughout your stay alongside this terminal and we**,** for our part, will ensure that our personnel do likewise, and co-operate fully with you in the mutual interest of safe and efficient operations.

Before the start of operations, and from time to time thereafter, for our mutual safety, a member of the terminal staff, where appropriate together with a responsible officer, will make a routine inspection of your ship to ensure that the questions on the LNGC / FSRU Safety Check List can be answered in the affirmative. Where corrective action is needed, we will not agree to operations commencing or, should they have been started, we will require them to be stopped.

Similarly, if you consider safety is endangered by any action on the part of our staff or by any equipment under our control you should demand immediate cessation of operations.

Please acknowledge receipt of this letter by countersigning and returning the attached copy.

Name of FSRU Representative on Duty: _____

Position: _____

Phone Number: _____

UHF Channel _____

VHF Channel _____

	LNGC Master:	**FSRU / Terminal Representative:**
Name:	_____	_____
Signature:	_____	_____
Date:	_____	_____

3. Communication Agreement between LNGC & FSRU

Primary Communication:	
Secondary Communication:	
Emergency Communication:	
Emergency Alternative:	

Primary ESD / Communication Link:	
Secondary ESD / Communication Link:	
Back up ESD Link:	

IN CASE THAT NONE OF THE ABOVE COMMUNICATION METHODS CAN BE ACHIEVED,
CARGO TRANSFER SHALL BE SUSPENDED IMMEDIATELY.

The Emergency Shutdown System can be activated by either the LNGC or FSRU.
Either vessels shall not hesitate to activate the ESD System without delay, if deemed necessary.
Upon activation of an ESD, communication should be established by the activating vessel with the other vessel soonest after initiating an ESD with details of the event.

Please sign for receipt of following UHF communication equipment which shall be returned on completion of operations prior to sailing:

☐ 1 x UHF Hand Held Radio ☐ 1 x Spare Battery ☐ 1 x Battery Charger

LNGC Name: _____

Chief Officers Name: _____

Chief Officers Signature: _____

Date: _____

Bahia LNG Regasification Terminal - TRBA

STS OPERATION EMERGENCY SIGNAL

FIVE (5) OR MORE SHORT BLASTS ON THE SHIPS WHISTLE

THIS EMERGENCY SIGNAL SHALL BE USED IN THE EVENT OF A CARGO EMERGENCY DURING THE STS OPERATION OR IN THE EVENT OF TOTAL BREAKDOWN OF COMMUNICATION

UPON HEARING FIVE (5) OR MORE SHORT BLASTS ON THE SHIPS WHISTLE OR EXTERNAL ALARM SYSTEM ALL OPERATIONS IN PROGRESS SHALL BE IMMEDIATELY SUSPENDED

4. LNGC Hourly Cargo Transfer Log

The following information shall be exchange at least Hourly with the FSRU via agreed communication links.

	Date & Time (LT)	Onboard Quantity (m3)
Start of Full Rate:		
Start of Ramp Down:		
Height from Keel to Center of Manifold on the LNGC (m):		

Discharging LNGC							
Date & Time	Quantity to Discharge (QTD)	Hourly Rate	CT Pressure	Manifold (Average)			Midships Draft
				Liquid Press	Liquid Temp	Vap Press	
	m^3	m^3	kPa (g)	kPa (g)	°C	kPa (g)	m

5. TRBA Cargo Handling Agreement between FSRU & LNGC

LNGC Name:			
Date of All Fast:		**FSRU Name:**	
Time All Fast:		**Terminal:**	

Agenda:

1. Delivery Volumes
2. STS Transfer Parameters
3. Gas Management
4. Essential System Tests
5. Cooldown
6. Transfer – Ramp Up
7. Transfer – Ramp Down
8. Draining, Purging & Final Gauging
9. SIMOPS
10. Contingency / Emergency Management
11. Local Regulations / Additional STS Checks / Information & Agreement
12. Declaration

Attendance List		
Name	**Rank / Position**	**Ship Name / Company**

1. Delivery Volumes	
A. Quantity of LNG on LNGC on Arrival:	m^3
B. Quantity of LNG to be Transferred to FSRU:	m^3
C. Quantity of Cargo to Remain as Heel After Discharge:	m^3
D. Average LNGC Tank Pressure:	kPa (g)
E. Average Liquid Temperature:	°C
F. Is Cargo Specification & Volume Commercially Acceptable:	☐ Yes ☐ No – Follow Up Required Between Seller & Buyer

2. STS Transfer Parameters		
A. Manifolds to be Connected on LNGC: (L1 L2 V L3 L4)	☐ L1 ☐ L2 ☐ V ☐ L3 ☐ L4	
B. FSRU Max Available Allowable Operating Flow: (m3/hr)	**Per Hose:**	**Total:**
C. LNGC Max Available Allowable Operating Flow: (m3/hr)	**Manifold:**	**Total:**
D. Manifold Strainers Installed: (Mesh Size)	**LNGC:**	**FSRU:**
E. Manifold Connections will be torqued to: (Nm)		
F. Maximum Allowable Difference in Manifold Heights: (m)		
G. Other Instructions or compatibility adjustments required:		

3. Gas Management		
A. Cargo Tank Safety Relief Valves Setting: (kPaG)	**LNGC:**	**FSRU:**
B. LNGC Vapour Return Setting during Transfer: (kPaG)		**kPaG**
C. Tank Pressure Limits to Reduce Transfer Rate: (kPaG)	**LNGC:**	**FSRU:**
D. Tank Pressure Limits to Stop Transfer Operations: (kPaG)	**LNGC:**	**FSRU:**
E. **FSRU** Actual Available Gas Management Capability: (t/hr)		**Total Capability T/Hr**
F. **LNGC** Actual Available Gas Management Capability: (t/hr)		**Total Capability T/Hr**
G. Does **LNGC** have any Gas Management Limitations/Issues:		
H. Tank Pressure when LNGC **will** start gas burning: (kPaG)		

4. Essential System Testing		
A. Warm ESD Test to be Initiated by:	**LNGC:** ☐	**FSRU:** ☐
B. Cold ESD Valve Stroke Test: (After STS Hose Cool Down)	**LNGC:** ☐	**FSRU:** ☐
C. Agreed ESD Valve Closing Times (Seconds)	**LNGC:**	**FSRU:**

5. Cooldown	
A. Time required to Cooldown STS Transfer Equipment: (Minutes)	**Mins**
B. LNGC Stripping Header Pressure shall be maintained at: (bar)	
C. Cooldown complete when FSRU Liquid Header Temperatures are colder than:	**°C**

6. Transfer – Ramp Up	
A. Agreed that prior to the 1st Cargo Transfer Pump, both FSRU & LNGC shall confirm that the cargo system line up has been Double Checked (two persons independently) against the Planned Transfer Procedure.	
B. Agreed BULK LNG Transfer Rate is:	**m^3/hr**
C. LNGC Maximum Acceptable Manifold Backpressure throughout transfer:	**bar**
D. LNGC Main Cargo Pumps Maximum Working Capacity:	**m^3/hr**
E. LNGC Cargo Pumps Minimum CONTINUOUS-FLOW Capacity: (None Recirculating)	**m^3/hr**
F. How many Cargo Pumps does the LNGC plan to run to achieve rate:	
G. How long shall the LNGC wait before starting second pump:	**Mins**
H. How long between starting each remaining pump:	**Mins**
I. Agreed Minimum Total Rump Up Time:	**Mins**
J. Start Return Gas from FSRU – Number of minutes' notice required by FSRU:	**Mins**

7. Transfer – Ramp Down		
A. Agreed Notice to FSRU prior to starting Ramp Down:		**Mins**
B. Agreed Notice Period to FSRU for Stopping Return Gas:		**Mins**
C. Estimated Ramp Down Time:		**Mins**
D. Topping Off Rate:	**m3/hr**	**Mins**
E. Inform FSRU Prior to Operating Cargo & Stripping Pumps	☐ Stopping ☐ Starting ☐ Adjusting	
F. Heeling Out – Additional Time Required from End of Bulk Transfer:		**Mins**
G. Heeling Out - Maximum Planned Stern Trim Required:		**Meters**

8. Draining purging and Final gauging	
A. The Draining & Purging Procedure has been discussed & agreed:	
B. Estimated Time: End of Cargo Transfer to Completion STS Hose Disconnection:	**Hours**
C. Minimum Measurable CTMS Liquid Level to be kept for Gauging in each tank:	**mm**
D. Planned Trim at time of Gauging:	**Meters**

9. SIMOPS (Simultaneous Operations)		
Planned Maintenance Activities:	☐ Yes	☐ No
Details:		

10. Contingency / Emergency Management (plans to be discussed & agreed any supporting comments to be added below)

11. Local Regulations / Additional STS Checks / Information & Agreement

12. Declaration

We the undersigned have understood and agreed to the Cargo Handling Agreement.

For LNG Carrier:		**For FSRU:**	
Name:	_____	Name:	_____
Rank:	_____	Rank:	_____
Date:	_____	Date:	_____
Signature:	_____	Signature:	_____

6. ISGOTT Checks PRE-ARRIVAL Ship/Shore Safety Checklist

Date and Time:	
Port and Berth:	
TANKER Name:	
TERMINAL Name:	
Product to be Transferred:	

PART 1A. TANKER: Checks Pre-Arrival			
Item	**Check**	**Status**	**Remarks**
1	Pre-arrival information is exchanged (6.5, 21.2)	☐ Yes	
2	International shore fire connection is available (5.5, 19.4.3.1)	☐ Yes	
3	Transfer hoses are of suitable construction (18.2)	☐ Yes	
4	TERMINAL information booklet reviewed (15.2.2)	☐ Yes	
5	Pre-berthings information is exchanged (1.3, 22.3)	☐ Yes	
6	Pressure/vacuum valves and/or high velocity vents are operational (11.1.8)	☒ Yes	
7	Fixed and portable oxgen analysers are operational (2.4)	☐ Yes	

PART 2. TERMINAL: Checks Pre-Arrival			
Item	**Check**	**Status**	**Remarks**
12	Pre-arrival information is exchanged (6.5, 21.2)	☐ Yes	
13	International shore fire connection is available (5.5, 19.4.3.1, 19.4.3.5)	☐ Yes	
14	Transfer equipment is of suitable construction (18.1, 18.2)	☐ Yes	
15	TERMINAL information booklet transmitted to TANKER (15.2.2)	☐ Yes	
16	Pre-berthing information is exchanged (21.3, 22.3)	☐ Yes	

ISGOTT Checks AFTER MOORING Ship/Shore Safety Checklist

PART 3. TANKER: Checks After Mooring			
Item	**Check**	**Status**	**Remarks**
17	Fendering is effective (22.4.1)	☐ Yes	
18	Mooring arrangement is effective (22.2, 22.4.3)	☐ Yes	
19	Access to and from the TANKER is safe (16.4)	☐ Yes	
20	Scuppers and savealls are plugged (23.7.4, 23.7.5)	☐ Yes	
21	Cargo system sea connections and overboard discharges are secured (23.7.3)	☐ Yes	
22	Very high frequency and ultra high frequency transceivers are set to low power mode (4.11.6, 4.13.2.2)	☐ Yes	
23	External openings in superstructures are controlled (23.1)	☐ Yes	
24	Pumproom ventilation is effective (10.12.2)	☐ Yes	
25	Medium frequency/high frequency radio antennae are isolated (4.11.4, 4.13.2.1)	☐ Yes	
26	Accommodation spaces are at positive pressure (23.2)	☐ Yes	
27	Fire control plans are readily available (9.11.2.5)	☐ Yes	

PART 4. TERMINAL: Checks After Mooring			
Item	**Check**	**Status**	**Remarks**
28	Fendering is effective (22.4.1)	☐ Yes	
29	TANKER is moored according to the TERMINAL mooring plan (22.2, 22.4.3)	☐ Yes	
30	Access to and from the TERMINAL is safe (16.4)	☐ Yes	
31	Spill containment and sumps secure (18.4.2, 18.4.3, 23.7.4, 23.7.5)	☐ Yes	

ISGOTT Checks PRE-TRANSFER Ship/Shore Safety Checklist

Date and Time:	
Port and Berth:	
TANKER Name:	
TERMINAL Name:	
Product to be Transferred:	

PART 5A. TANKER and TERMINAL: Pre-Transfer Conference				
Item	**Check**	**TANKER Status**	**TERMINAL Status**	**Remarks**
32	TANKER is ready to move at agreed notice period (9.11, 21.7.1.1, 22.5.4)	☐ Yes	☐ Yes	
33	Effective TANKER & TERMINAL communications are established (21.1.1, 21.1.2)	☐ Yes	☐ Yes	
34	Transfer equipment is in safe condition (isolated, drained and de-pressurised) (18.4.1)	☐ Yes	☐ Yes	
35	Operation supervision and watchkeeping is adequate (7.9, 23.11)	☐ Yes	☐ Yes	
36	There are sufficient personnel to deal with an emergency (9.11.2.2, 23.11)	☐ Yes	☐ Yes	
37	Smoking restrictions and designated smoking areas are established (4.10, 23.10)	☐ Yes	☐ Yes	
38	Naked light restrictions are established (4.10.1)	☐ Yes	☐ Yes	
39	Control of electrical and electronic devices is agreed (4.11, 4.12)	☐ Yes	☐ Yes	
40	Means of emergency escape from both TANKER and TERMINALare established (20.5)	☐ Yes	☐ Yes	
41	Firefighting equipment is ready for use (5, 19.4, 23.8)	☐ Yes	☐ Yes	
42	Oil spill clean-up material is available (20.4)	☐ Yes	☐ Yes	
43	Manifolds are properly connected (23.6.1)	☐ Yes	☐ Yes	
44	Sampling and gauging protocols are agreed (23.5.3.2, 23.7.7.5)	☐ Yes	☐ Yes	
45	Procedures for cargo, bunkers and ballast handling operations are agreed (21.4, 21.5, 21.6)	☐ Yes	☐ Yes	
46	Cargo transfer management controls are agreed (12.1)	☐ Yes	☐ Yes	
47	Cargo tank cleaning requirements, including crude oil washing, are agreed (12.3, 12.5, 21.4.1)	☐ Yes	☐ Yes	See also parts 7B/7C as applicable

48	Cargo tank gas freeing arrangements agreed (12.4)	☐ Yes	☐ Yes	See also part 7C
49	Cargo and bunker slop handling requirements agreed (12.1, 21.2, 21.4)	☐ Yes	☐ Yes	See also part 7C
50	Routine for regular checks on cargo transferred are agreed (23.7.2)	☐ Yes	☐ Yes	
51	Emergency signals and shutdown procedures are agreed (12.1.6.3, 18.5, 21.1.2)	☐ Yes	☐ Yes	
52	Safety data sheets are available (1.4.4, 20.1, 21.4)	☐ Yes	☐ Yes	
53	Hazardous propertiers of products to be transferred are discussed (1.2, 1.4)	☐ Yes	☐ Yes	
54	Electrical insulation of the TANKER and TERMINAL interface is effective (12.9.5, 17.4, 18.2.14)	☐ Yes	☐ Yes	
55	Tank venting system and closed operation procedures are agreed (11.3.3.1, 21.4, 21.5, 23.3.3)	☐ Yes	☐ Yes	
56	Vapour return line operational parameters are agreed (11.5, 18.3, 23.7.7)	☐ Yes	☐ Yes	
57	Measures to avoid back-filling agreed (12.1.13.7)	☐ Yes	☐ Yes	
58	Status of unused cargo and bunker connections is satisfactory (23.7.1, 23.7.6)	☐ Yes	☐ Yes	
59	Portable very high frequency and ultra high frequency radios are intrinsically safe (4.12.4, 21.1.1)	☐ Yes	☐ Yes	
60	Procedures for receiving nitrogen from tanker to cargo tank are agreed (12.1.14.8)	☐ Yes	☐ Yes	

PART 5C. TANKER and TERMINAL: Liquefied Gas. Checks Pre-Transfer				
Item	**Check**	**TANKER Status**	**TERMINAL Status**	**Remarks**
71	Inhibition certificate received (if required) from manufacturer	☐ Yes	☐ Yes	
72	Water spray system is operational (5.3.1, 19.4.3)	☐ Yes	☐ Yes	
73	Appropriate personal protective equipment is identified and available (4.8.1)	☐ Yes	☐ Yes	
74	Remote control valves are operational	☐ Yes	☐ Yes	
75	Cargo pumps and compressors are operational	☐ Yes	☐ Yes	
76	Maximum working pressures are agreed between TANKER and TERMINAL (21.4, 21.5, 21.6)	☐ Yes	☐ Yes	
77	Reliquefaction or boil-off control equipment is operational	☐ Yes	☐ Yes	
78	Gas detection equipment is appropriately set for the cargo (2.4)	☐ Yes	☐ Yes	
79	Cargo system gauge operation and alarm set points are confirmed (12.1.6.6.1)	☐ Yes	☐ Yes	
80	Emergency shutdown systems are tested and operational (18.5)	☐ Yes	☐ Yes	
81	Cargo handling rate and relationship with valve closure times and automatic shutdown systems is agreed (16.8, 21.4, 21.5, 21.6)	☐ Yes	☐ Yes	
82	Maximum / minimum temperatures / pressures of the cargo to be transferred are agreed (21.4, 21.5, 21.6)	☐ Yes	☐ Yes	
83	Cargo tank relief valve settings are confirmed (12.11, 21.2, 21.4)	☐ Yes	☐ Yes	

PART 6. TANKER and TERMINAL: Agreements Pre-Transfer				
Part 5 Item	**Agreement**	**Details**	**TANKER Initials**	**TERMINAL Initials**
32	TANKER manoeuvring readiness	Notice period (maximum) for full readiness to manoeuvre:		
		Period of disablement (if permitted):		
33	Security protocols	Security level:		
		Local requirements:		
33	Effective TANKER / TERMINAL communications	Primary system:		
		Backup system:		
35	Operational supervision and watchkeeping	TANKER:		
		TERMINAL:		
37 38	Dedicated smoking areas and naked lights restrictions	TANKER:		
		TERMINAL:		
45	Maximum wind, current and sea/swell criteria or other environmental factors	Stop cargo Transfer:		
		Disconnect:		
		Unberth:		
45 46	Limits for cargo, bunkers and ballast handling	Maximum transfer rates:		
		Topping-off rates:		
		Maximum manifold pressure:		

		Cargo temperature:		
		Other limitations:		
45 46	Pressure surge control	Minimum number of cargo tanks open:		
		Tank switching protocols:		
		Minimum number of cargo tanks open:		
		Tank switching protocols:		
		Full load rate:		
		Topping-off rate:		
		Closing time of automatic valves:		
46	Cargo transfer management procedures	Action notice periods:		
		Transfer stop protocols:		
50	Routine for regular checks on cargo transferred are agreed	Routine transferred quantity checks:		
51	Emergency signals	TANKER:		
		TERMINAL:		
55	Tank venting system	Procedure:		
55	Closed operations	Requirements:		
56	Vapour return line	Operational parameters:		
		Maximum flow rate:		

56	Nitrogen supply from terminal	Procedures to receive:		
		Maximum pressure:		
		Flow rate:		
83	For gas TANKER only: cargo tank relief valve settings	Tank 1:		
		Tank 2:		
		Tank 3:		
		Tank 4:		
		Tank 5:		
	Exceptions and Additions			
	Exceptions and Additions			
	Exceptions and Additions			
	Exceptions and Additions			
	Exceptions and Additions			
	Exceptions and Additions			

Date and Time:	

Port and Berth:	
TANKER Name:	
TERMINAL Name:	
Product to be Transferred:	

PART 7A. GENERAL TANKER: Checks Pre-Transfer			
Item	**Check**	**Status**	**Remarks**
84	Portable drip trays are correctly positioned and empty (23.7.5)	☐ Yes	
85	Individual cargo tank inert gas supply valves are secured for cargo plan (12.1.13.4)	☐ Yes	
86	Inert gas system delivering inert gas with oxygen content not more than 5% (11.1.3)	☐ Yes	
87	Cargo tank high level alarms are operational (12.1.6.6.1)	☐ Yes	
88	All cargo, ballast and bunker tanks openings are secured (23.3)	☐ Yes	

DECLARATION

We the undersigned have checked the items in the applicable parts 1 to 7 as marked and signed below:

Element	N/A	Tanker	Terminal
Part 1A. TANKER: checks pre-arrival		☐	
Part 1B. TANKER: checks pre-arrival if using an inert gas system	☐		
Part 2. TERMINAL: checks pre-arrival			☐
Part 3. TANKER: checks after mooring		☐	
Part 4. TERMINAL: checks after mooring			☐
Part 5A. TANKER and terminal: pre-transfer conference		☐	☐
Part 5B. TANKER and terminal: bulk liquid chemicals. Checks pre-transfer	☐		
Part 5C. TANKER and terminal: liquefied gas. Checks pre-transfer		☐	☐
Part 6. TANKER and terminal: agreements pre-transfer		☐	☐
Part 7A. GENERAL TANKER: checks pre-transfer		☐	
Part 7B. TANKER: checks pre-transfer if crude oil washing is planned	☐		
Part 7C. TANKER: checks prior to tank cleaning and/or gas freeing	☐		

In accordance with the guidance in chapter 25 of ISGOTT, we have satisfied ourselves that the entries we have made are correct to the best of our knowledge and that the TANKER and TERMINAL are in agreement to undertake the transfer operation.

We have also agreed to carry out the repetitive checks noted in parts 9 and 10 of the ISGOTT SSSCL, which should occur at intervals of not more than_____hours for the TANKER and not more than_____hours for the TERMINAL.

If, to our knowledge, the status of any item changes, we will immediately inform the other party.

Tanker		Terminal	
Name:		Name:	
Rank:		Position:	
Signature:		Signature:	
Date:		Date:	
Time:		Time:	

ISGOTT Checks DURING TRANSFER Ship/Shore Safety Checklist

REPETITIVE CHECKS

PART 8. TANKER: Repetitive Checks During and After Transfer								
Item	**Check**	**Time**	**Time**	**Time**	**Time**	**Time**	**Time**	**Remarks**
Interval Time: hrs								
8	Inert gas system pressure and oxygen recording operational	☒ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
9	Inert gas system and all associated equipment are operational	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
11	Cargo tank atmospheres are at positive pressure	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
18	Mooring arrangement is effective	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
19	Access to and from the TANKER is safe	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
20	Scuppers and savealls are plugged	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
23	External openings in superstructures are controlled	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
24	Pumproom ventilation is effective	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
28	TANKER is ready to move at agreed notice period	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
29	Fendering is effective	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
33	Communications are effective	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
35	Supervision watchkeeping is adequate	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
36	Sufficient personnel are available to deal with an emergency	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
37	Smoking restrictions and designated smoking areas are complied with	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	

38	Naked light restrictions are complied with	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
39	Control of electrical devices and equipment in hazardous zones is complied with	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
40 41 42 51	Emergency response preparedness is satisfactory	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
54	Electrical insulation of the TANKER/TERMINAL interface is effective	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
55	Tank venting system and closed operation procedures are as agreed	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
85	Individual cargo tank inert gas valves settings are as agreed	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
86	Inert gas delivery maintained at not more than 5% oxygen	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
87	Cargo tank high level alarms are operational	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
Initials								

PART 9. TERMINAL: Repetitive Checks During and After Transfer								
Item	**Check**	**Time**	**Time**	**Time**	**Time**	**Time**	**Time**	**Remarks**
Interval Time: hrs								
18	Mooring arrangement is effective	☒ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
19	Access to and from the TERMINAL is safe	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
29	Fendering is effective	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
32	Spill containment and sumps are secure	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
33	Communications are effective	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
35	Supervision and watchkeeping is adequate	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
36	Sufficient personnel are available to deal with an emergency	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
37	Smoking restrictions and designated smoking areas are complied with	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
38	Naked light restrictions are complied with	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
39	Control of electrical devices and equipment in hazardous zones is complied with	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
40 41 47 51	Emergency response preparedness is satisfactory	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
54	Electrical insulation of the TANKER/TERMINAL interface is effective	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
55	Tank venting system and closed operation procedures are as agreed	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
Initials								

7. STS Transfer Checklist 6 – Pre Transfer Checklist for in Port STS Cargo Transfers

LNGC Name:		**FSRU Name:**	
Transfer Date:		**Location:**	

Item Description	LNGC	FSRU	Terminal
1. A standard pre-transfer checklist, such as the ISGOTT ship/shore safety checklist or equivalent, has been satisfactorily completed & arrangements have been made for repetitive checks during the transfer.			
2. Requirements in the Terminal Manual are understood & will be complied with.			
3. Generic contingency plans for the STS Operation have been shared and reviewed by involved parties and responsibilities are understood.			
4. Information on security has been exchanged and, if applicable , a Declaration of Security completed.			
5. Suitable fenders are rigged in the proper manner to prevent contact of the vessels.			
6. Suitable cutting equipment, fire axes etc. are in place at the fore and aft mooring stations.			
7. Weather forecasts have been reviewed & arrangements made to continuously receive reports throughout the transfer.			
8. A means of access is in place to allow personnel to safely transit between the vessels.			
9. The cargo meets the minimum specification requirements.			
10. Cargo transfer operation to be completed under closed conditions.			
11. Procedures for managing cargo tank pressure on the have been agreed and gas management equipment is fully operational and free from defects.			
12. Cargo monitoring systems, including level gauges, high level alarms, pressure gauges and alarms, have been tested and are operational.			
13. All parties are in agreement on the final volumes to be transferred.			
14. Access to the cargo manifold is restricted and controlled during cargo transfer operations.			
15. Personnel engaged in the cargo operation are provided with appropriate PPE such as personal gas detectors/monitors			
16. Cargo hoses have been pressure tested within the prescribed period & documentation is available onboard.			
17. Cargo hoses is suitable for LNG and in good condition.			
18. If electrically continuous hoses are used, the hoses are connected to the vessel with the insulated flange before being passed to the other vessel for connections.			
19. The Cargo hose string is of adequate length and adequately supported			
20. The Cargo lines lined up in accordance with the cargo operation plan			
21. Spill response equipment is on station and ready for immediate deployment.			
22. Where applicable, fire-fighting equipment is on station and ready for immediate use.			

23. Spaces to be routinely monitored for any build-up of flammable vapour have been identified			

	Signature	Name
LNGC Chief Officer:		
CORV FSRU:		
Terminal Representative:		

8. STS Transfer Checklist 6A – Checks During in Port STS Operations

This checklist is to be completed at the same frequency of the LNGC/FSRU Safety Checklist repetitive checks

LNGC Name:		**FSRU Name:**	
Transfer Date:		**Location:**	

Item Description	Repetitive Check	Repetitive Check	Repetitive Check	Repetitive Check	Repetitive Check
1. Present weather & sea conditions are within agreed limits.					
2. Personnel engaged in the cargo transfer operation are wearing appropriate PPE.					
3. Cargo Hose Strings, manifold connections and cargo systems are free of any leakages.					
4. Cargo Hoses are properly supported considering changing freeboards and any movement between the vessels.					
5. All cargo monitoring systems, including level gauges, high level alarms, pressure gauges and alarms are functioning correctly.					
6. The cargo transfer operation is continuing under close conditions.					
7. The sea surface around the vessels is periodically visually checked for any sign of pollution.					
8. All identified spaces are being routinely monitored for any build-up of flammable vapour.					
9. All mooring lines are correctly tensioned and managed during the cargo transfer operation					
10. On completion of cargo transfer to or from a tank, the tank is secured.					
11. Levels in all cargo and ballast tanks including those not being worked are routinely monitored					

Repetitive Check Completed By (Initials):					
Date Repetitive Check Completed:					
Time Repetitive Check Completed:					