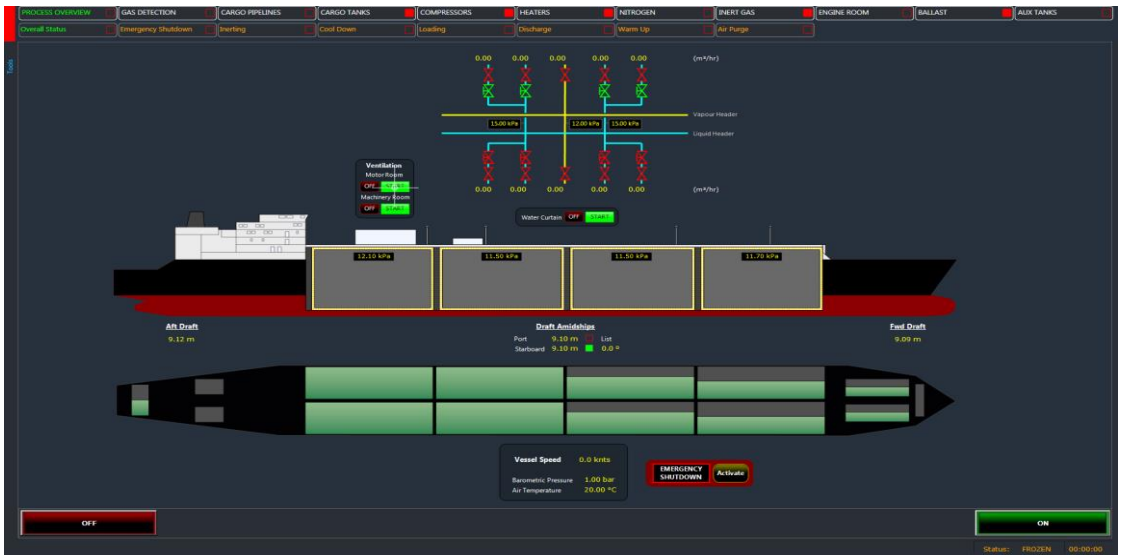
Liquefied Natural Gas Carrier

170,000 m3; DFDE
GTT III Membrane Containment

LOADING EXERCISE

CHECK LIST

(Day 2)



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	FINAL PREPARATION FOR LOADING	**30 min**	
1.	CCR manned according to SMS	As per duties	
2.	Delegation of CCR Team duties	Complete CCR Tasks Delegation Check List	
3.	IAS Monitors set properly		IAS Monitor set up accordingly
4.	Confirm Override removed for Extreme High Level = ESD (99.5 %- ESD activate) and Very High Level = TPS (99.0%- Filling Valve Closes) and verified and witnessed by Master	PROCESS OVERVIEW > Emergency shutdown	Use Indicator Plate in CCR & Make Logbook entry
5.	Communications with Shore tested by all available means	Working channels confirmed VHF67	Back Up Tel. Number 222
6.	Internal Radio Communication Tested	Working channels confirmed UHG Ch. 5	
7.	Internal Phone Communication Tested	Working tel. No. 222 confirmed	Eng., Bridge, Agent, Charterer
8.	Deck Watch in positions	Complete Main & Trunk Deck Tasks List	
9.	**Public Announcement Made** ñCARGO OPERATION ABOUT TO START, ALL COMPANY and TERMINAL REGULATIONS STRICTLY TO BE FOLLOWEDò	Use UHF radios Ch. 5	
10.	Vesselôs liquid header & crossover confirmed cold	Ò-100°C	
11.	Cargo Tanks ATR confirmed	ATR < -130 C	
12.	Loading rate as agreed in Ship / Shore meeting	12,000m^3/h	
13.	Initial minimum rate agreed	Initial rate agreed 1,000 m3/hr	
14.	Number and Capacity of each shore pump	12 pumps x 1,000 m3/h	
15.	Confirmed Heel quantity on board	app. 200 m3	
16.	LNG quantity to load confirmed with shore	98.5% Vol 170,441 m^3	
17.	Line up independently checked by Gas Engineer and/or OOW	Loading Plan Part 2	Logbook entry
18.	Check Shore Tank Pressure	Confirm with terminal 10 kPa(G)	
19.	Cargo Tank Pressure Control during loading confirmed	app. 10 kPa(G)	
20.	Status of Vapour cross over BLOCK Valve CG075 change from Open to Close	Confirm CLOSE Locally	

21.	Before starting H/D Compressor confirm following: • N2 pressure • Aux Lube Oil Pump • IGV minimum • Anti-surge Valve • Power ON • Manual Control ON • Check Line Up	 > 30kPa AUTO running 0 % or + 80° Open Loading Plan	Loading Plan ï Part 2
22	Open ESD Vapour Manifold Valve	Obtain permission from Shore	
24.	Start opening Compressor supply to vapour manifold (CG547) and commence Cool down both H/D compressor below -100C	*Opening Ratio Depending on HD Comp C/D Rate. 10deg/min.	Before starting Compressor, ensure fully open
26.	Confirm with terminal all in order and ready to receive vapour by HD Compressor		
27.	**FINAL PREPARATION SECTION COMPLETED**	**VERBALLY AGREED BY CCR TEAM**	

	COMMENCE LOADING OPERATION	**Ramp Up Diagram**	
1.	Advise Terminal Vessel ready for commence Loading	VHF Ch. 67	
2.	Request to Open Liquid Manifold ESD Valves	Obtain permission from Shore	
3.	Request to start 1st Shore Cargo Pump	Ramp Up Diagram Initial rate 1,000 m3/hr	
4.	Liquid passing at manifold	Confirmed by sound of Liquid	Manifold pressure changes
5.	Cargo received in cargo tanks	Confirmed by appropriate gauges (level, temp, pressureé)	
6.	Confirm Cargo Tank Pressure under control	10 kPa(G)	
7.	Safety Rounds on trunk deck reported	No leakage	
8.	Manifold Port and Stbd all in order	No leakage, pressure steady	
9.			
10.			
11.			
12.	**COMMENCE LAODING SECTION COMPLETED**	**VERBALLY AGREED BY CCR TEAM**	

	RAMP UP (check after each shore pump started)		**Ramp Up Diagram**						
		Shore Pumps	**2 3**	**4 5**	**6 7**	**8 9**	**10**	**11**	**12**
1.	Gradually increase rate	Follow Ramp Up Diagram							
2.	Cargo Tank Pressure Control	10 kPa(G)							
3.	Cargo Tank liquid levels (Special attention to NON heel tank pressure raise)	Level raising in each tank accordingly							
4.	Cargo Filling Valves adjusted accordingly as per flow increase	Final Status: CL100 ï 50% CL200ï 100% CL300 ï 100% CL400 ï 80%							
5.	Liquid header and manifold pressures monitored	Normal pressure range 50-100 kPa(G)							
6.	Safety checks carried out	As per duties							
7.	**RAMP UP SECTION COMPLETED**	**VERBALLY AGREED BY CCR TEAM**							

	FULL RAT E ACHIEVED	**12,000 m3/hr**	
1.	Full rate achieved	Confirm with Shore	
2.	Filling valves opened to below settings at end of ramp up: CL100 ï 50% CL200ï 100% CL300 ï 100% CL400 ï 80%	Minimum Total Valve Opening 300% at Full Rate Loading (12000m3/hr)	
3.	Cargo Tank Pressure under Control	10 kPa(G)	
4.	Cargo Tank liquid levels (Special attention to NON heel tank pressure raise)	Level raising in each tank	
5.	Liquid header and manifold pressures monitored	Normal pressure range 50-100 kPa(G)	
6.	Final Safety rounds completed before setting CCR / Deck Normal Watch	As per Duties	
7.	HD compressor control changed to ñAUTOò	Tank pressure set point 10 kPa(G)	
8.			
9.	**FULL RATE SECTION COMPLETED**	**VERBALLY AGREED BY CCR TEAM**	

	MAX RATE LOADING	**Hourly check**	
1.	C/O Standing and Night Orders	Understood, agreed and Signed	
2.	CCR manned properly	by OOW and C/O or G/E if operationally required	
3.	Ship / Shore Checklist ñRò code carried out as agreed with terminal	If shore representative is not attending ship ï Call Terminal and advise C/O	
4.	Cargo operation records maintained (Hourly) Stability, Hourly Rate, Manifold press, Vapour Arm Angle, IBS/IS, Nitrogen, Cofferdam Heating	Inform C/O in case difference outside agreed	
5.	Hourly reports to Terminal Cargo Rate, Cargo O/B, ETC R/Dé	Inform C/O in case difference outside agreed	
6.	Loading Operation execution as per Plan (Cargo O/B, Draft, trim, list, hull stresses)	Inform C/O in case difference outside agreed	
7.	Cargo tank level gauge readings compared (float vs. radar) at 25%, 50% and 75% of cargo volume on board	Inform C/O in case difference outside agreed	
8.	Visual drafts obtained (daytime) and compared with draft gauges / CTMS / loading computer	Inform C/O in case difference outside agreed	
9.	Cargo tank volumes staggered during loading using small incremental adjustments to the cargo tank filling valves	Min 300% Fill Valve open at full rate	
10.	Stagger adjusted as per ramp down worksheet in use for ramp down staging (CT1 - CT4 - CT2 - CT3)	CT#1>CT#4=0.75m CT#4>CT#2=0.38m CT#2>CT#3=0.48m	
11.	**BULK LOADING SECTION COMPLETED**	**VERBALLY AGREED BY CCR TEAM**	
	DE-BALLASTING		
1.	Obtain permission from shore for starting de-ballasting and confirm ballast sample passed laboratory test	Within 70 minutes from sample taken	
2.	Permission from terminal to commence de-ballasting operation requested		
3.	**Water hammer (pressure surge) effect precautions observed**		
4.	De-ballasting planned for completion at least one (1) hour before ramp down		
5.	Line up (gravity) confirmed correct	Confirm watchman sðby overboard position for monitoring	
6.	De-ballasting by gravity commenced and all in order	Advise C/O in case of any troubles	
	Sufficient Notice to Engine room Given for WBP requirements		

7.	Once de-=ballasting by gravity ceased, Line up (de-ballasting pumps) confirmed correct		
8.	De-ballasting by ballast pumps No. 1 & No. 2 resumed		
9.	Line up (eductor) confirmed correct		
10.	De-ballasting by stripping eductor completed		
11.	**Ensure all de-ballasting completed before ramp down commence**		
12.	**DE-BALLASTING SECTION COMPLETED**	**VERBALLY AGREED BY CCR TEAM**	
	RAMP DOWN PREPARATION	**30 min to R/D**	
1.	Cargo Tanks levels adjusted as per Ramp down planed sequence	Tank 1Ÿ 4Ÿ 2Ÿ 3	
2.	Cargo tank level gauge readings compared (float vs. radar)	Difference inside 10cm	
3.	HD compressor control changed to ñMANUALò	Tank pressure controlled at 10 kPa(G)	
4.	Pump De-ballasting operation completed, two eductor running	Educts all WBT, except FPT	
5.	Chief officer present in CCR	As per standing / night order book	
6.	CCR manned properly	by two (2) officers	
7.	Trunk Deck manned properly	G/E or OOW & watchman	
8.	Communications test with terminal carried out	All available means of communication	
9.	Notice prior to ramp down given to the terminal	10 min	
10.	Announcement made R/D about to commence	Deck, Engine, Captainé	
11.	ETC time advised to Agent	Pilot booking 3 hrs after ETC	
11.	**RAMP DOWN PREPARATIOS SECTION COMPLETED**	**VERBALLY AGREED BY CCR TEAM**	
	RAMP DOWN	**60 min to ETC**	
1.	CT. 1 Filling valve of the topped off tank shut at final level	Confirmed by Trunk deck (Sounding= 28.37 m)	
2.	CT. 1 Cargo tank final level steady	Confirmed by Trunk deck	

3.	Cargo Tank Pressure Control	10 kPa(G)	
4.	Liquid header and manifold pressures monitored	Normal pressure range 50-100 kPa(G)	
5.	CT. 4 Filling valve of the topped off tank shut at final level	Confirmed by Trunk deck (Sounding= 28.16 m)	
6.	CT. 4 Cargo tank final level steady	Confirmed by Trunk deck	
7.	Cargo Tank Pressure Control	10 kPa(G)	
8.	Liquid header and manifold pressures monitored	Normal pressure range 50-100 kPa(G)	
9.	CT. 3 Filling Valve fully Open before CT 2 completed	Confirmed by Trunk deck (Sounding= 28.16 m)	
10.	CT. 2 Filling valve of the topped off tank shut at final level	Confirmed by Trunk deck	
11.	CT. 2 Cargo tank final level steady	Confirmed by Trunk deck	
12.	Cargo Tank Pressure Control	10 kPa(G)	
13.	Liquid header and manifold pressures monitored	Normal pressure range 50-100 kPa(G)	
14.	**Confirm Communication with terminal by all available means**	All available means of communication	
15.	**Agreed Notice prior to stoppage of loading given to the terminal**		
16.	H/D compressor running condition / parameters	Stop H/D as required	
17.	Status of Vapour cross over BLOCK Valve CG075	Confirm OPEN (_____ %)	
18.	Cargo Tank Pressure Control	10 kPa(G)	
19.	**Filling valve of the last topped off cargo tank maintained 100% open**	Confirmed by Trunk deck	
20.	Last tank (No. 3CT) top off planned with minimum flow rate	1300 m^3/h	
21.	Shore SôBY to STOP loading	By all available means of communication	
22.	Allowance for LNG liquid to be drained back to cargo tank after stoppage confirmed	+/-50 m^3	
23.	Order ñSTOPò ñSTOPò ñSTOPò Loading @ CT3 = 28.11 m	**Confirm NO LNG flow at manifold after ORDER**	
24.	**COMMENCE RAMP DOWN SECTION COMPLETED**	**VERBALLY AGREED BY CCR TEAM**	

	COMPLETION OF LOADING OPERATION		
1.	Cargo not flowing at manifold	Manifold Watch confirm	
2.	Cargo level steady all tanks	Trunk Deck watch confirm	
3.	All liquid manifold ESD valves shut	Terminal consent required	
4.	Liquid header and manifold pressures monitored	No pressure	
5.	Status of Vapour cross over BLOCK Valve CG075	Confirm OPEN (%) / CLOSE	
	Trim & list adjusted when cargo loading operation completed for CTM if required (by gravity)	Even keel & upright	
	Ensure line up for departure correct ï no line blocked ï allow for thermal expansions	Double check by OOW	
6.	**COMPLETION OF LOADING SECTION COMPLETED**	**VERBALLY AGREED BY CCR TEAM**	
	LIQUID ARMS DRAINING		
1.	All liquid manifold ESD valves shut	Confirmed by IAS and Locally	
2.	**Manifold manned properly**	**Gas Engineer present**	
3.	Line up confirmed correct	**As per Load Plan**	
4.	Ship side liquid arms & manifolds confirmed liquid free	**Terminal and Ship**	
5.	**ESDS blocked upon completion of draining**		
6.	**LIQUID ARMS DRAINING SECTION COMPLETED**	**VERBALLY AGREED BY CCR TEAM**	
	LIQUID ARMS PURGING & DISCONNECTION		
1.	Manifold manned properly	Gas Engineer present	
2.	Line up confirmed correct	As per Load Plan	
3.	**Ship side Liquid arms & manifolds confirmed gas free**	**$CH_4 \leq 2.0\%$ Vol**	
4.	Cargo arms disconnected	Confirmed	
5.	**Manifold blind flanges confirmed fully bolted & tightened**	**Blank On**	

6.	Water curtain to be stopped (call E/R to stop GS pump)	Confirm by Manifold watch	
7.	**LIQUID ARMS PURGING & DISCONNECTION SECTION COMPLETED**	VERBALLY AGREED BY CCR TEAM	
	FINAL CTMS		
1.	Record each tank level, volume, pressure	Manual Calculation	
2.	**Calculate TOTAL cargo on board**	**Manual Calculation**	
3.	Calculate CARGO QUANTITY LOADED	CTMS ñAfter Unloadingò report	
4.	Cargo tank float gauge readings recorded	Trunk Deck & Recorded in Logbook	
5.	**LIQUID ARMS PURGING & DISCONNECTION SECTION COMPLETED**	**VERBALLY AGREED BY CCR TEAM**	
	START BOIL OFF MANAGEMENT	**GCU**	
1.	**Start GCU by free flow**	**Free flow**	
2.	**Start GCU by L/D Compressor**	**4 t/hr**	
3.	Cargo Tank Pressure Control	10 kPa(G)	
4.	**START BOIL OFF MANAGEMENT SECTION COMPLETED**	**VERBALLY AGREED BY CCR TEAM**	
	PREPARIOTION FOR DEPARTURE		
1.	Ship Vapour arms & manifolds confirmed gas free	CH_4 Ò2.0% Vol	
2.	Vapour Manifold blind flanges confirmed fully bolted & tightened	Blank on	
3.	Cargo tank float gauges raised & secured	Confirmed by Gas Engineer	
4.	Manifold drain scoops swung inboard	Confirmed by Gas Engineer	
5.	ESD connection powered off (terminal approval)	Confirmed by Gas Engineer	
6.	Optical cable disconnected	Confirmed by Gas Engineer	
7.	All entries in port log (time sheet) confirmed accurate	Confirmed by OOW	
8.	Post-discharging meeting carried out	Master; C/O and Duty Officer	
9.	Departure trim & list adjusted	Trim & List = zero	
10.	Ballast pumps stopped	Eductor secured	

11.	All ballast system valves confirmed closed/open as per departure condition to avoid pressure build up	As per Plan	
12.	Line up to prevent cargo lines pressure build up confirmed correct (vapour thermal expansion precautions)	As per Plan	
13.	Departure stability condition printed out	Confirmed in order	
14.	On ESD Page light up ñOverride Extreme High Levelò (ESD 99.5%) and ñOverride Very High levelò level (TPS 99.0%) alarms (to be to protect system activation of ESD at sea) and Turn NOTICE board in CCR to ï ESD OVERRIDE	Verified and witnessed by Master, and record same in log book	
15.	Shore Gangway removed (shore staff disembarked)	Confirmed by Gas Engineer	
16.	Cargo Control Room VHF	switched off	
17.	**PREPARATION FOR DEPARTURE SECTION COMPLETED**	**VERBALLY AGREED BY CCR TEAM**	
	ADDITIONAL REQUIREMENTS		

	Rank	**Name**	**Signature**
C/L compiled by:	Chief Officer		
C/L checked by:	Gas Engineer		
	1st Officer		
	2nd Officer		
	3rd Officer		
	Master		