

Programme: 100m LNG Dual-fuel Ro-Ro Passenger Ferry

Programme Director: [redacted]

Review Period: June 2022

<u>Name</u>	<u>Job Title</u>	
[redacted]	[redacted]	
[redacted]	[redacted]	
[redacted]	[redacted]	



- **Minutes from previous meeting**
- **HSE**
- **Programme**
- **Production**
- **Engineering**
- **Commissioning**
- **OOR's**
- **Risk Register comments (circulated for review)**
- **Variations to Contract**
- **CMAL Comments**
- **AOB**

HSE Dashboard

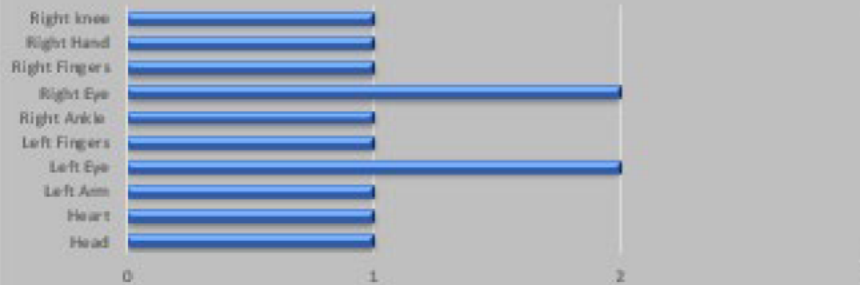
June 2022



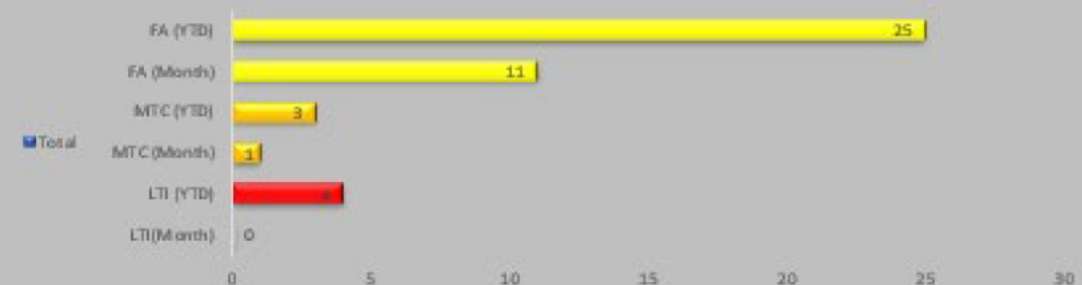
* Per 1,000,000 working hours
** Estimated no. of hours worked

Incident Statistics	Target	Actual		Fatal	0	Fire	0	Proactive Statistics	Target		Actual	
	2022	Month	YTD						Month	2022	Month	YTD
Number of Hours Worked**	870,000	66897	195919	RIDDOR	0	Damage	0	Number of YSYD Cards	>50	>600	33	45
Number of Lost Time Incidents (> 3 Days)	< 9	0	4	LTI (> 3days)	0	Environmental	0	Toolbox Talks Issued	2	24	2	6
Lost Time Incident Freq Rate*	< 10.14	0.00	20.42	Medical Treatment (MTC)	1	Serious Near Miss	0	Housekeeping Inspections	4	48	3	5
Number of Recordable Injury Incidents	< 30	0	5	First Aid	11	YSYD	33	Emergency Drills Completed	>4	>48	2	7
Total Recordable Injury Incident Rate*	< 35.0	14.95	35.73	Total Injuries	12	TOTAL Incidents	13	Vessel Compliance Checks	30	4200	20	65

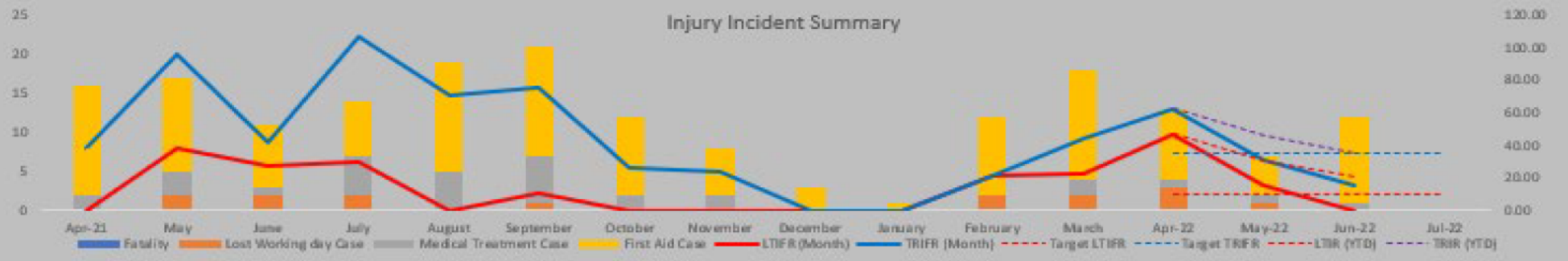
Affected Area



Incident Classification



Injury Incident Summary



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Highlights

- 12 injury incidents reported
- 0 LTIs,
- 1 MTC
- 11 FACs
- 33 Near Misses (YSYD)
- Better performance with actuals approaching the target levels

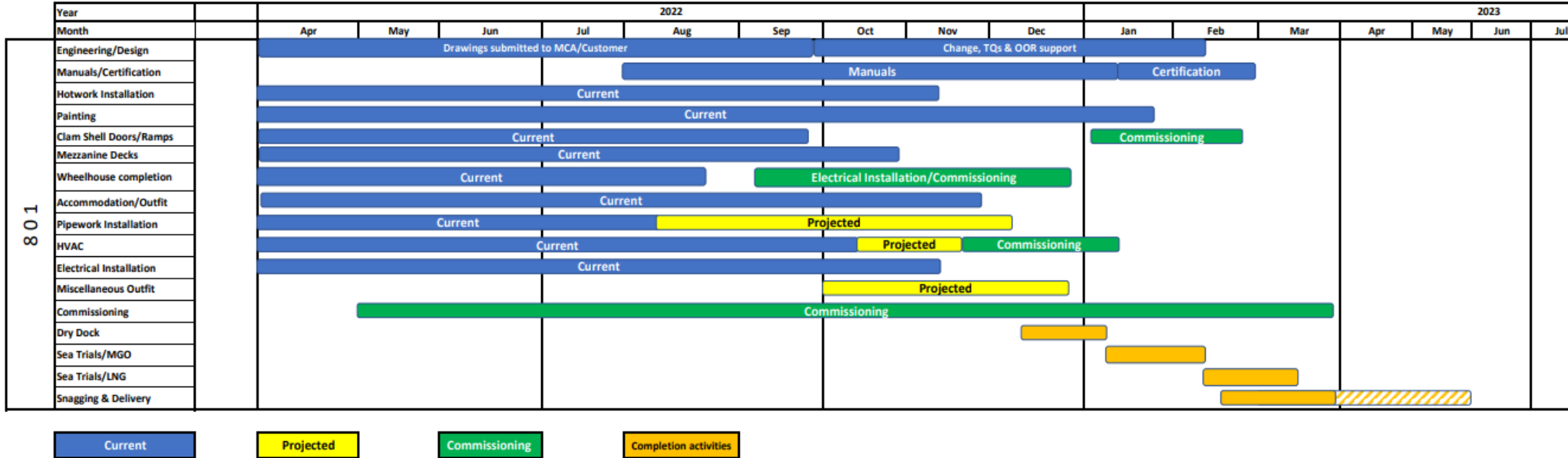
Moving forward :

- Work continues to develop a more agile PTW system draft forms are with the printers, flowcharts completed, process under review, required registers completed.
- CSE process advanced with documentation at the printers, flowcharts completed, required registers completed.
- 4 x ^[redacted] undertaken stage one of their ERT training and performed excellently.
- Onboard standards and collaboration improving – good communication and engagement from our contractor partners.

Level 0 Programme

Level 0 - Programme

30/06/2022



Area Completion Summary 01/07/2022

Area Completion Summary 01/07/2022

Vessel 801	Activity	Complete	
		May	June
1	Engineering & Design	70%	70%
2	Steelwork Main Structure	95%	93%
3	Piping Systems	60%	56%
4	Mechanical Equipment	90%	92%
5	Electrical Equipment	90%	90%
6	Electrical Cabling	5%	21%
7	Accommodation Outfit	20%	25%
8	Painting	40%	42%
9	Commissioning	10%	10%
10	Drydocking	66%	66%
11	Sea Trials	0%	0%
Overall Completion		70%	70%

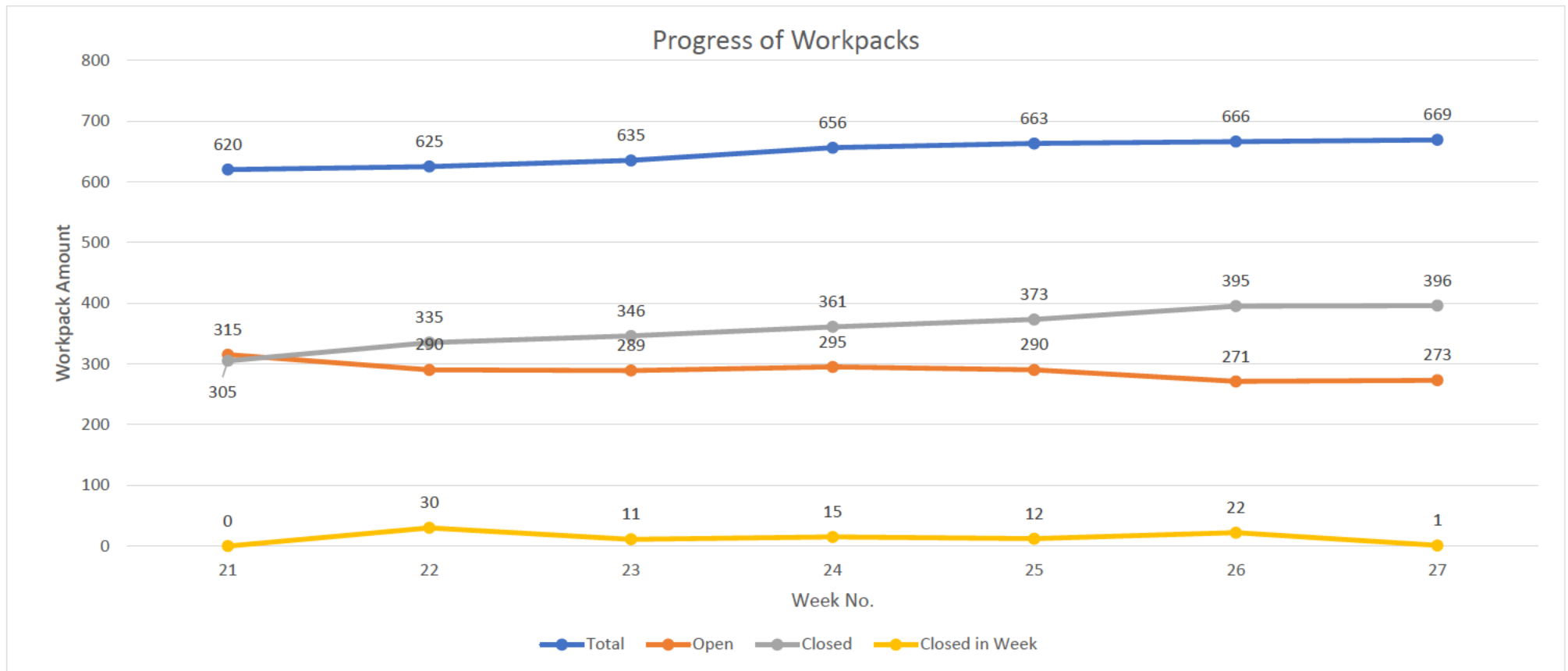
Vessel 802	Activity	Complete	
		May	June
1	Engineering & Design	50%	50%
2	Steelwork Main Structure	60%	65%
3	Piping Systems	2%	4%
4	Mechanical Equipment	50%	50%
5	Electrical Equipment	50%	50%
6	Electrical Cabling	0%	0%
7	Accommodation Outfit	0%	0%
8	Painting	20%	20%
9	Commissioning	0%	0%
10	Drydocking	0%	0%
11	Sea Trials	0%	0%
Overall Completion		45%	46%

Hotwork Work Packs



New focus has been placed on closing out all open work packs:

- Current total work packs to completion- 669
- Current number of closed work packs - 396 (59%)
- Current number of open Work packs – 273 (41%)



Pipework Installation

[redacted]

Currently progressing well to plan.

Total planned spools: 3314

Week 26: Cumulative planned 1678 (50%)
Cumulative installed 1763 (53%)



[redacted]

Total Spools planned: 1346

**Week 26: Cumulative planned 859 (63%)
Cumulative installed 802 (59%)**

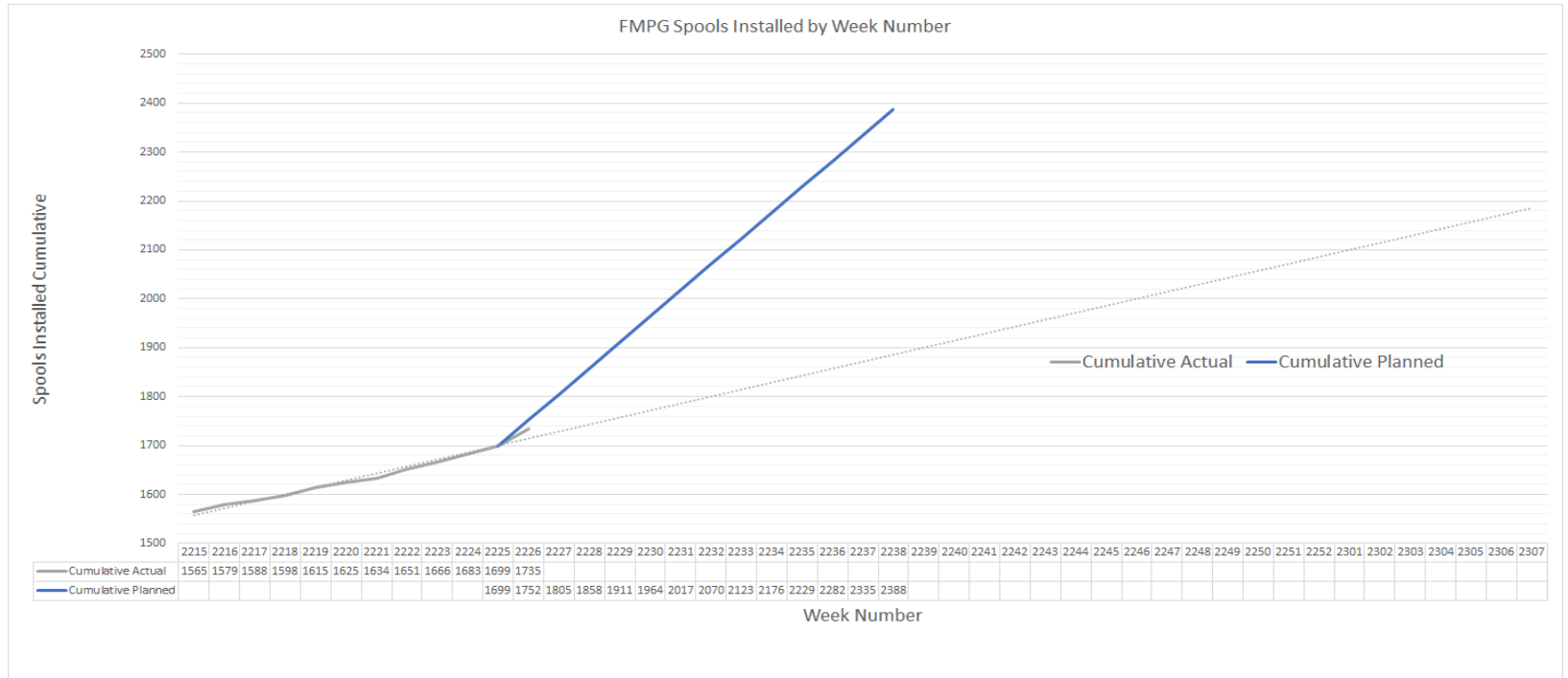


FMPG

Splitting the combined S curve into individual data has highlighted the inefficiency of the FMPG team.

From week 15 FMPG had 815 planned spools remaining. The data highlights an install rate on average of 14 spools per week up to week 25, with renewed focus we achieved 36 spools installed in week 26.

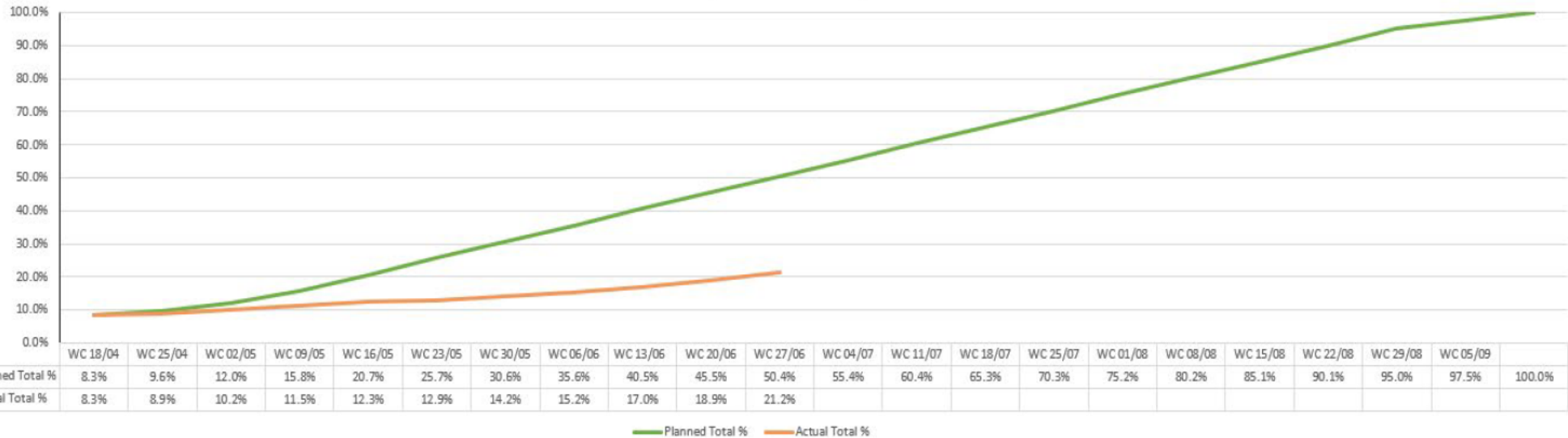
Total planned spools: 2388
Week 26: Cumulative planned 1752 (73%)
Cumulative actual 1735 (72%)



As of week commencing 27, [redacted] currently 21% complete against planned 50%. Following on from discussions this week with [redacted] Managing Director, Revised recovery plan to be issued 17/07.

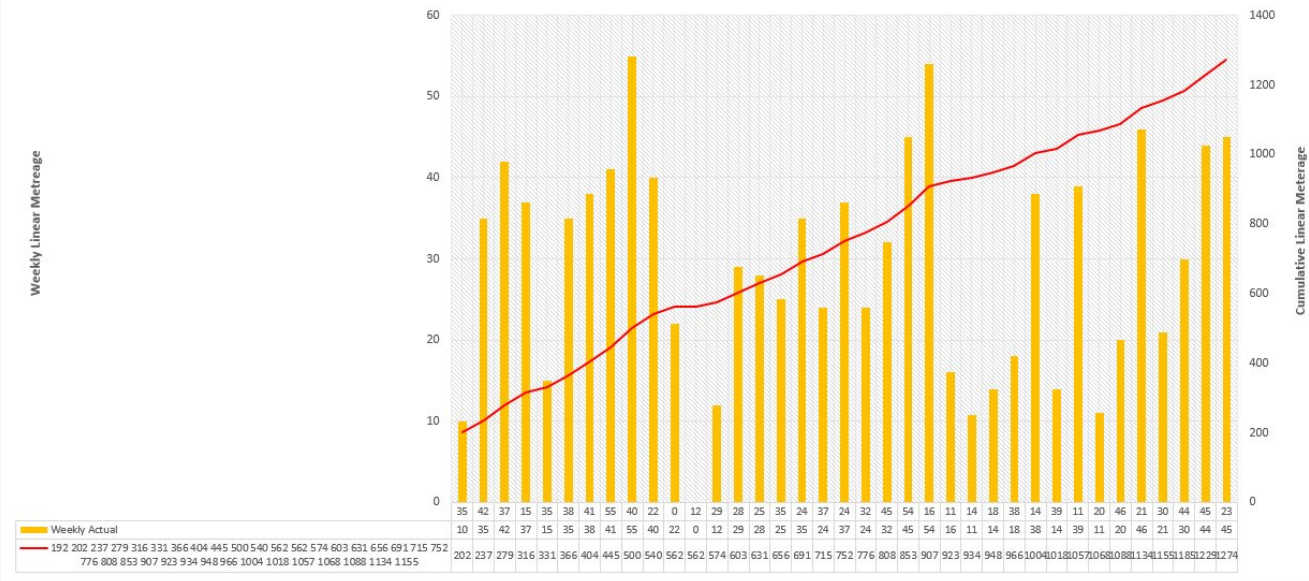
Revised plan will be monitored through daily Plan of the day onboard ship and weekly subcontractor meetings

[redacted] Ship 801 Cable Pulling



HVAC installation progress:

HVAC Installation Progress 'S' Curve



Zone	Total Metreage	Installed Metreage	%age Complete
1	32	20	62.5%
2	35	20	57.1%
3	113	63	55.8%
4	94	55	58.5%
5	14	0	0.0%
6	378	22	5.8%
7	0	0	#DIV/0!
8	280	184	65.7%
9	1096	772	70.4%
10	198	169	85.4%
11	115	0	0.0%
Totals	2355	1305	55.4%

Engineering & Steelwork

[redacted]

- Mezzanine deck hot work 95% complete
- Hinge points now established.

Steelwork

- Hotwork now complete in EGR side of subzone 1002.
- Hotwork now complete in AHU compartment in subzone 1003.
- Hotwork now complete in Server room compartment in 1003.
- Instrument room at 95% completion in subzone 1003.
- Handrails on bridge top now complete.
- Storm rails on exterior of 7 deck now 90% complete.
- Starboard side funnel 50% complete, welded connection to shell now complete.
- Port side funnels now 70% complete.
- Hot work on 6 deck to allow screeding now at 90% completion.
- Wheelhouse doors and overhead console foundations complete.
- 7 deck accommodation areas hot work at 95% completion.
- Hot work to allow installation of MES door complete.
- Bonded windows structure tacked in ready to be fully welded.

Specialist Subcontractors

- [redacted] – erected 90% of liquid phase pipework and preparing for gas phase pipework install
- [redacted] - specialist fitters have reviewed scope with positive feedback. Planned to install Mid August.
- [redacted] programme received and draft plan submitted for agreement.

Electrical

- Cable install from 30/5/22 up until 30/06/2022 – circa 22,000 meters.
- Deck 7 behind linings inspection on port and starboard cabins took place, issues to resolve which is work in progress.
- Work commenced in Emergency Generator Room cabling, replacement interconnectors pulled, glanded and terminated from Main Switchboard to Emergency Switchboard.
- Cabling to Emergency Generator will be complete to allow 1st run of Emergency Generator 1st week in July.
- Ongoing work glanding terminating and testing in ECR.
- Cable install started in Aux Machine Space.
- Hold ups for completing main cable routes are painting which is being addressed slowly.
- Nightshift continuing to pull cables below 3 deck.
- Commissioning plan still being made priority.

Pipework

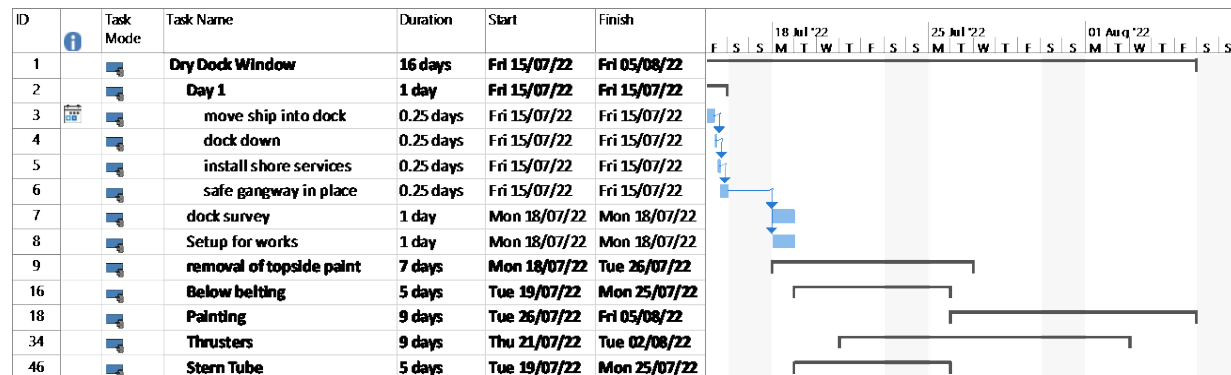
- 722 HT/LT - due for completion week 26 still on course.
- Installation of boiler pipework currently at 80%.
- Crankcase modifications spools fabricated by pipeshop and ready for install during dry dock.
- Sea water re-walked by ops and defects complete.
- First System Mechanical Completion and Presentation to Commissioning Team for Acceptance – [redacted]
- First Chemical Cleaning and Flushing Loop Completed and Approved by Class – EmDG FO Supply
- Week on Week Delivery of Piping Install Target of 200+ Spools
- Pipework Pressure Testing Scope Ramped Up With Further Planned Up-man to Increase Test Paths Completion

To be updated for next meeting with [redacted]

801 Outfit activities									
	Install Hotwork	Pipe Installation	Electrical Installation	Pipe testing	Pipe insulation	Screed Deck	MCA Sign off	Install Accomodation	
Zone	Finish	Finish	Finish	Finish	Finish	Finish	Finish	Start	Finish
Zone 8 (5 Deck)									
Zone 8 - Sub-Zone 801 - Aft Lounge	10-Jun-22	04-Jul-22	23-Jun-22		25-Aug-22	08-Nov-22		24-May-22	31-Oct-22
Zone 8 - Sub-Zone 802 - Lounge & Cafeteria	03-May-22	19-Jul-22	18-Jun-22					04-Nov-21 A	08-Nov-22
Zone 8 - Sub-Zone 803 - Galley	05-May-22	25-Jul-22	06-Jul-22					05-Jul-21 A	08-Nov-22
Zone 9 (6 Deck)									
Zone 9 - Sub-Zone 901 - 2nd Pax Deck Aft	23-May-22	28-Jun-22	06-Jul-22		21-Sep-22	29-Sep-22		05-Jul-21 A	19-Sep-22
Zone 9 - Sub-Zone 902 - 2nd Pax Deck Mid-Ship	06-May-22	19-Jul-22	09-Jul-22					05-Jul-21 A	07-Oct-22
Zone 9 - Sub-Zone 903 - Air Handling Machinery Room	27-Apr-22	21-Jul-22	23-Jul-22					23-May-22	31-Aug-22
Zone 9 - Sub-Zone 904 - 2nd Pax Deck Fwd	16-May-22	15-Aug-22	05-Aug-22					10-Nov-21 A	03-Nov-22
Zone 10 (7 Deck)									
Zone 10 - Sub-Zone 1001 - Bridge Aft	05-May-22	28-Jun-22	23-Jul-22		12-Oct-22	10-Aug-22		02-Nov-21 A	16-Aug-22
Zone 10 - Sub-Zone 1002 - Egr & Air Handling Machinery	27-Apr-22	30-Jun-22	24-May-22					06-Jun-22	05-Aug-22
Zone 10 - Sub-Zone 1003 - Bridge Fwd	26-May-22	01-Jul-22	08-Jul-22					09-Nov-21 A	15-Sep-22
Zone 11 (7 Deck)									
Zone 11 - Sub-Zone 1101 - Wheelhouse	22-Apr-22	02-Aug-22	08-Jul-22		01-Nov-22			25-Apr-22	17-Aug-22

Drydocking

- Slots booked
 - Summer Docking 14 July to 07 August 2022
 - Winter Docking 23 January to 31 January 2023 (Provisional)
- Thrusters
 - 802 Thrusters removed and returned to [redacted] for overhaul
 - PO placed for overhaul of both 801 / 802 thrusters and service engineer support for 801 docking
- Scope
 - Scope of Work being agreed reviewed at meeting with [redacted], major activities:
 - Paint topsides
 - Removal of marine growth
 - Painting below belting
 - Replacement of thruster pods
 - Stern tube
 - Draught marks



- Issues

- Double sleeve issue in double bottoms and inaccessible areas.
- ^[redacted] Gas Phase install being reviewed for any rip outs required for work in way.

- Challenges

- Arising Clam shell door hotwork completion for Dry dock.
- Completion of hotwork to meet subcontractor access dates.
- Level of change being managed.
- Pipework completion for commissioning (FO).
- Material availability.
- Driving OORs to closure.
- Cable installation & termination.
- Production drawings closeout – design freeze.
- Shortage of skilled personnel.
- Experience of supervisors.

- Successes

- Pressure tested and flushed EMDG fuel pipework.
- Starboard shell inline fairing complete.
- Pre dry docking Inclining.

No change to 802 programme at present. Overall programme under review by FMPG senior management team.

Level 0 - Programme

Date: 23/03/2022

Year		2022										2023																
Month		Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec					
802	Structure	[Bar from Mar to Dec]																										
	Hotwork Installation		[Bar from Apr to Jan]																									
	Painting			[Bar from May to Apr]																								
	Pipework Installation			[Bar from Jun to May]																								
	HVAC				[Bar from Aug to Jun]																							
	Electrical Installation				[Bar from Sep to Jul]																							
	Insulation & Architecture				[Bar from Sep to Sep]																							
	Launch													[Bar from Feb to Mar]														
	Commissioning													[Bar from Mar to Sep]														
	Dry Dock																									[Bar in Sep]		
	Sea Trial																									[Bar from Sep to Oct]		
	Snagging & Delivery																									[Bar from Oct to Dec]		

Manufacturing Sheds

Units manufactured & Erected

- A5/5
- A8/5
- A9/5

Consolidation

- Units 49, 50 & 51 fully consolidated.
- Bulwarks complete, Panama eyes signed off on Starboard side. Awaiting sign off on Port side.



Outfitting

Hotwork commencing well in Zone 2.

- Pipe Penetrations 65% complete.
- Major Foundations 60% complete.
- Lifting eyes and monorails 70% complete

Pipework Installation

- Work packs being released for pipe install to commence in 0202.

Launch

- Launch preparation ongoing.
- Launch Date February 23rd, 2023.

Electrical

- Contract to be re-tendered.

HVAC

- Commencing September.

Specialist Contractors

- Currently reviewing opportunities and finalising plan with specialist contractors.

Issues

- Engineering support.

Key Challenges for the Shipyard

Key known challenges for the shipyard to meet the programme:

- Manpower support.
- Change management.
- Material availability.
- Installation and termination of the ship's cables.
- Completion of pipework to meet commissioning dates, including addressing pipe clashes.
- Close out OOR's.
- Delivery and completion of production drawings and accuracy of production drawings.
- Shortage of experience trades and supervisors.
- Lack of familiarity with final stages of finishing the vessels, surveys, documentation and certification.

Successes

- Unit 49/50/51 consolidated.
- Bulwarks complete.

Weight & Stability

- **Stability**

- Cross flooding pipe due to arrive in yard early June, with installation to follow thereafter.
- Awaiting updated calculations for damage stability (Water on Deck) following updates to ECR partial bulkheads and the lift shaft doors on the car deck. MCA and lift company ([redacted]) are being chased. Correspondence is ongoing with [redacted] to make the doors semi-watertight.

- Weight – [redacted] advised that weight margin had reduced from 20 tonnes to 5 tonnes. Further discussion required.

- Legacy weight list (handed over from former FMEL team) is frozen and kept as is for a reference.
 - predicted weight was 3556T with 44T contingency
 - Total validated amount was 3,449T, 97% of total
 - Remaining 3% validation was for foundations and supports.
- To validate the legacy weights list, as of mid-March a new weight study started. Overall [redacted] weights extracted from the 3D model.
 - This study has never been performed at any stage of initial or detail design. Model based study provided a better estimation covering the previous margin assumptions.
 - **All** 3D model items extracted for weight details and these items have provided a better reference for Centre of Gravity (CoG) values.
 - Current weight estimate is 3548.08t and 5.27t remained as margin. Contractual weight is 3553.35t
 - Weight updates and distribution is ongoing for longitudinal strength calculation. (Part of stability calcs for submission)
- Interim inclining experiment will be undertaken to set the towing condition 2 weeks prior to the dockyard transit. (2nd July 2022) Currently, 3344t is available onboard including scaffoldings etc. This corresponds to 92-93% ship completion level. Better estimation of CoGs of ship will be undertaken afterwards along with determination of transit condition for docking with calculation of docking ballast requirements.

Other docs to deliver

- [redacted] to confirm if [redacted] is still required, CMAL & FMPG have agreed (13/05/22) that this is not required as a final deliverable document however a test pack will be created to show how the system recovers after failures. FMPG to propose a test pack format to CMAL.
- Machinery list (including serial numbers) is WIP. The commissioning team are producing and will also record last maintenance date where appropriate. This shall also cover the requirements for producing tallies. PO currently being raised.
- Operations Manual – This will be reviewed on an ongoing basis during commissioning and training of equipment.
- As built drawings for P&IDs and technical compartment arrangements have been agreed with CMAL. Other as built drawings to be agreed with CMAL

Lloyds and MCA plan approval update

Lloyds

Under Review with Lloyds	Date sent to LR	Note
Anti Fouling Plan	15/09/2021	Part of the Eco notation, Shall be approved for ship completion hand over date as part of larger pack
Cargo Securing Manual	01/02/2022	^[red] comments received, continue to work on this alongside CMAL and other priority tasks
Damage Control Plan	20/04/2022	Part of Stability book. To be released after stability book approval

MCA

Under Review with MCA	Date sent to MCA	Note
Emergency Towing Booklet	11/04/2022	Only for information but copy to be kept on board. (Not MCA scope) ^[red] comments awaited.
Accommodation Layouts	15/02/2022	
Accommodation Handrailing	31/01/2022	Will be finalised after Escape route approval
Crew Accommodation Plan	15/02/2022	
Fire Control Plan	20/04/2022	Updated in line with Structural Fire protection Plan, resubmitted on 27/06/2022
Structural Fire Protection Plan	20/04/2022	As of 26/06/22, bulkheads conditionally approved, deckheads rejected, a meeting requested to discuss LNG bunker insulation with MCA on 27/06/22
Fixed Fire Extinguishing Syst. ECR & Pipes, Cables Transformer Room	04/11/2021	Provisionally agreed require new Type Approval Certificate from Tyco for system as current cert is out of date.

To Be submitted to MCA (in Work)	Responsible	Note
Stability book	FMPG	Finalise after incline, Draft End Q2 2022
^[redacted] Muster Lists (Mode 1-4)	CMAL	
^[redacted] SAR Plan	CMAL	
801&802-LNGPac Operating & Maintenance Manual LNGPac-H149-D9	Wartsila	^[redacted] Updating, ^[redacted] to confirm requirement
Emergency Low level lighting	FMPG	Submit after escape routes update
Fire & Deck Wash System	FMPG	Updating due to removal of hose reels and replacement of Hydrants in Accommodation areas.

CMAL Drawing Approval update

- NO CHANGE due to other priorities as these drawings will be covered when as built drawings are produced for the final sign off.
- CMAL Drawing Approval update
 - 68 Total to approve
 - 18 now approved by CMAL
 - 20 under review & nearing approval.
 - 26 others still to be submitted for approval

P&IDs

- 9 Systems Approved (P&IDs)
- 23 Systems (P&IDs) to be approved by CMAL, currently these are being reviewed separately and then both parties

Contract Specification

- There are various updates within the document which require to be internally reviewed and then presented to CMAL for agreement.

Crew Training

Training schedule (only soft booked)

1st vessel in Q1/2023

-
- **Weeks 9-10: 27th February until 10th March 2023 (Engines at [redacted])**
- **Week 11: 13th until 17th March 2023 (Engine Control at [redacted])**
- **Week 12: 20th until 24th March 2023 (LNGPac at [redacted])**
- **Week 13: 27th until 31st March 2023 (Propulsion at [redacted] or on board)**

2nd vessel in Q1/2024

- **Week 8: 19th until 23rd February 2024 (Propulsion at [redacted] or on board)**
- **Weeks 9-10: 26th February until 8th March 2024 (Engines at [redacted])**
- **Week 11: 11th until 15th March 2024 (Engine Control at [redacted])**
- **Week 12: 18th until 22nd March 2024 (LNGPac at [redacted])**

Still to confirm

PMS and Alarm and Monitoring system Under discussion to arrange with [redacted]

118 TECHNICAL TRAINING FOR CREW

The Builder will provide on board training in machinery and equipment for key staff. The Builder will also provide training as detailed in the Requirement Specification and Technical Schedule, and will include:

LNG Systems	Up to 10 people (3 courses)
Navigation and Communication Systems	6 people
Communications Systems	6 people
Generators & Prime Movers	Up to 10 people (3 courses)
Propeller Units	Up to 10 people (CPP)
Power Management System	6 people
Alarm, Monitoring & Control Systems,	6 people
Lifesaving Equipment	6 people

This will be done separately from the commissioning process.

The training is to be in English and held by specialist commissioning engineers from the Builder, or representatives from sub-contractors, prior to delivery and signed off by Buyers.

Specialist LNG training (approx. 1 week per ship) will be provided to ship's crew.

Training will also include Ship Specific ECDIS training for Deck Officers.

The following has been achieved since the previous meeting.

- [redacted] have completed pre-commissioning checks on all switchboards.
- Circuit breaker protection settings have been witnessed by Lloyds & CMAL
- Shore power has been connected to the 415V switchboard via the stbd shore connection.
- 415V & 240V emergency switchboards have been energised.
- [redacted] have installed the alarm system software. Alarms can now be checked from ECR console.
- Emergency generator fuel oil pipework has been pressure tested, chemical cleaned and flushed.
- Work package for Hull 802 drawing outputs agreed with programme of delivery and Design reviews ongoing.

Planned activities for the next 3 weeks.

- [redacted] are due on-site 04 July to commission the emergency generator. Lloyds have been booked to witness alarms and shutdowns 06 July.
- Testing of alarm system controls for the Group Starter Boards will start W/C 04 July.
- Sea Water system to be ran sea to sea.
- Starting air compressors to be commissioned.
- Pressure hold test on start air receivers.
- Design Reviews for WZ02, WZ03 & WZ04 (critical areas) will be completed.

OOR status

	All categories	Category 1	Category 2	Category 3
Total Raised	605	376	216	13
Total Closed	442	270	169	3
Total committed	52	42	9	1
Total to close when work complete	64	49	10	5
Total still to resolve	47	15	28	4

Category 1 - Must be done before handover

Category 2 - General / Specification Issues to be done - may carry over to warranty period

Category 3 - Snagging

- From last report we have seen a 23% reduction in OOR's to resolve, with 12 of 27 Cat 1 OORs resolved
- The revised ER walkway arrangements has been presented to CMAL and is being reviewed.
- All remaining committed or closed when work complete have been allocated to subzone/compartments and are included within the work pack diary program

Top Risks

Risk No	Risk Category	Risk Identified by:	Risk Owner	Risk Description	process	Action Planned	Action Owner	Target Date	Controls Confidence Levels	Current Impact	Current Likelihood	Current Risk Score	SCORE AT LAST REVIEW
42	PROJECT RISK	[redacted]	[redacted]	Performance of on site subcontractors impacts programme Add risk of under-performance of subcontractor	Subcontract Manager in place to provide oversight	1. Ensure access dates are achieved to minimise out of sequence working 2. Ensure all emergent change is managed through VO 3. Ensure material supply issues are addressed 4. Stores to provide complete kits	[redacted]		Reasonable	50	5	250	50
79	PROJECT RISK	[redacted]	[redacted]	There is a risk of late change due to design errors. These errors may be mistake, missed scope or non-conformances to requirements / spec. The non-conforming escape routes, stability and fuel system are examples.	Continue to work with the relevant parties (MCA, LR and CMAL) to derisk the design and agree acceptable concessions.	1. Complete review of single line diagrams with CMAL. 2. complete all plan approvals. 3. Review critical installations with LR & MCA where appropriate. 4. Complete update to contract technical spec to capture any agreed deviations and to identify any additional variations which need to be formalised or resolved. 5. Continue to work with the relevant parties (MCA, LR and CMAL) to derisk the design and agree acceptable concessions.	[redacted]			50	5	250	200
77	PROJECT RISK	CMAL	[redacted]	There is a risk that if all OORs are not agreed as closed with CMAL that acceptance of the vessel will be difficult to achieve.	Regular reviews of OORs in place to agree way forward with CMAL. OORs to be done will be scoped within the re-baselined programme	1. Work with Operations to close OORs with agreed solutions 2. Work with Engineering to conclude solutions to OORs without solutions 3. Put monitors in place to turn down OORs 4. SMT focus to be led by [redacted] 5. Maintain regular reviews 6. Ensure agreed OORs are scoped within the programme and workpackaged	[redacted]		Limited	50	5	250	250
4	Production	[redacted]	[redacted]	There is a risk that the programme is impacted due to a lack of buy -in from workforce to deliver the plan. This includes the fitness of our workforce to deliver the challenge ahead (mature workforce)	Rollout of Visual Management on 801; Allocation of Supervisor to zones with a team; Rollout of performance management Continue and excel the D&A testing across all shift including weekend	1. Employee engagement sessions planned for January 2022, planned for week 3 2. Provide visibility of the plan - rollout week 2 (for next 6 weeks) 3. Finalise allocation of supervisors to areas for start back in January - rollout week 02 4. Performance management in place in January 2022 5. Supervision / workforce buy in to working overtime needs to be increased	[redacted]		Reasonable	50	5	250	200
53	Engineering	[redacted]	[redacted]	Overhaul and Maintenance. Client concerned about removal space for ME pistons and other generators (thinks harbour gen set should be OK). This should be considered as high as it would prevent hand over	Removal diagrams have been produced showing that removal is feasible but space is tight.	1. Demonstrate removal onboard at the earliest opportunity 2. New action April 20: model removal reviews and demonstrations being undertaken and may fully prove the removal requirements 3. Demonstrate that design drawings clearly instill confidence to CMAL that removal routes can be achieved. 4. The removal of key mechanical components to be physically demonstrated as part of the trials program.	[redacted]			50	4	200	20

Top Risks

Risk No	Risk Category	Risk Identified by:	Risk Owner	Risk Description	process	Action Planned	Action Owner	Target Date	Controls Confidence Levels	Current Impact	Current Likelihood	Current Risk Score
41	PROJECT RISK	CMAL	[redacted]	LNG bunkering requires modifications as risk assessment has not yet been undertaken	HAZOP, HAZID and bunkering risk assessment undertaken	1. Attend LNG training to identify work to be done 2. Confirm that all actions from RBD are closed 3. Identify LNG suppliers (CMAL to advise) 4. Conduct initial risk assessment and action issuer as required. Consider whether a Subject Matter Expert should be used 5. Identify potential bunkering location (Troon to be confirmed) 6. Engage with all appropriate parties (including SME to complete risk assessment) 7. Conduct full risk assessment.	[redacted]		Limited	50	4	200
70	Engineering	[redacted]	[redacted]	there is a risk that there remains a non compliant axilock that has not been picked up as part of the review and modifications that have been issued.		1. Review status of all remaining axilocks on the ship 2. ensure that the Change / Mod Sheets to remove axilocks have been implemented and signed off. 3. redo to conduct survey checks and use "cheat sheet" to confirm that axilock types / locations are correct	[redacted]			50	4	200
78	PROJECT RISK	[redacted]	[redacted]	There is a risk that late approval of drawings results in additional reworking of progressed areas. This is a risk associated with change process / configuration management		1. Close all outstanding approvals with MCA / IT 2. Ensure all new AFC drawings are issued to Operations 3. Ensure all new drawing revisions are included in plan 4. install 3D model station on ship to provide access to supervisors 5. close out IT on review of revision levels of drawings with Supervision 6. process to be agreed to capture as built changes and update line diagrams	[redacted]		Reasonable	50	3	150
6	Engineering	[redacted]	[redacted]	There is a risk that there are items in the model which are required but do not have a production output drawing from IT or FMPPG. This would lead to late emerging change, late hotwork.	[redacted] :currently reviewing the model zone by zone and feeding back gaps to engineering. This process is however reactive and not effective use of	1. Drawings to be moved to sharepoint 2. Model to be available on the ship 3. Put change manager in place 4. [redacted] move to Manufacturing Engineering (Buildability). IT to review the Model and the ships for Critical areas. 5. Where drawing are not available, develop a fast track process (quick sketch) to allow the work to be completed. 6. Work with Operation Manager [redacted] and Technical Liaison to manage and fast track missing drawings which are key to complete hotwork. 7. How are supplier detailed workpackages packaged (e.g. TTS, alfa laval boiler) 8. Defined list available for platforms / walkways / ladders to be detailed by FMPPG 9. Area reviews by composite team will highlight issues	[redacted]		Reasonable	50	3	150
26	PROJECT RISK	[redacted]	[redacted]	Level of rework not sufficiently scoped. Known rework not fully scoped. Unknown rework will occur particularly during the test and commissioning phase	CNs and 200 series included in programme Change control process implemented. OORs incorporated into model	1. Completion of re-baseline evaluation 2. Allow additional time in the commissioning programme 3. confirm all lockout items are in space prior to hotwork completion 4. Check legacy change has all been completed or planned	[redacted]		Reasonable	25	4	100

Variations to Contract

VTC's	Contract Section	Description	Date Requested	Impact	Comments	Status
LNG-100-114	section 813: Fire and Wash Deck System	A fresh water fire main, supplied from the vessel's domestic fresh water system, will be provided in the main accommodation area and small bore fire hoses, of nominal 25 mm diameter and not exceeding 15 m length, will be provided at sufficient locations on each deck level to reach all parts of the accommodation This requirement to be deleted	13/04/2020	Requirement to be removed from technical specification		FM to send VTC
LNG-100-119	N/A	Provision of workshop tools		FM to supply various tools/pieces of equipment for workshop		postponed
LNG-100-121	section 561 i) passenger lifts	addition of weathertight door for passenger lift on 07 deck				costs to be determined
LNG-100-123	section 868: shore supply	Addition of a shore supply connection box for 802 only				redacted to send VTC
LNG-100-127		Sanitary/Grey Water System		Re-routing of laundry discharges to grey water tank		under investigation
LNG-100-128		Quick Release Hatches for shaft inspection in Workshop / Nitrogen spaces				under investigation
LNG-100-129		Domestic Hot Water		The installation for the potable freshwater which within the contract is stipulated as copper piping. Agreement with CMAL to change to Mappress rather than copper. This is a suitable replacement that is easier to install and maintain and is suitable for use on domestic systems. We have engaged with Lloyds and they do not have any issue with this	Amend Technical specification	redacted to send VTC

CMAL Comments to the Monthly Report

CMAL Comments:

- Conduct the risk management status in RAG (red amber green).

Key challenges for the shipyard:

- Key known challenges for the shipyard to meet the programme.
- Installation and termination of the ship's cables.
- Completion of pipework to meet commissioning dates, including addressing pipe clashes.
- Closure of OORs.
- Delivery and completion of production drawings and accuracy of production drawings.
- Availability of experienced supervisors.
- Shortage of experienced trades.
- Availability of materials.
- Lack of familiarity with final stages of finishing the vessels, surveys, documentation and certification.