

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

**Review Period:** April 2023

<u>Name</u>	<u>Job Title</u>	
David Tydeman	CEO	
[REDACTED]	Ship Delivery Director	
	Ship Delivery Director	
	CFO	

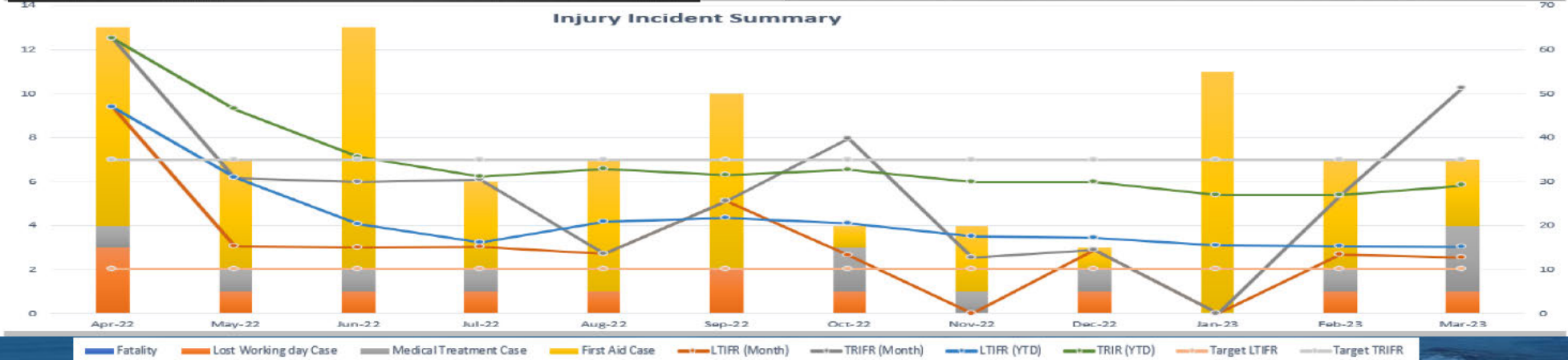


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# HSE Dashboard April 2023

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

Incident Statistics	Target	Actual		Fatal	0	Fire	1	Proactive Statistics				
	2023	Month	YTD					Target		Actual		
Number of Hours Worked**	858029	78137	78137	RIDDOR	1	Damage	0	Month	2023	Month	YTD	
Number of Lost Time Incidents (> 3 Days)	< 9	1	1	LTI (> 3days)	1	Environmental	0	Number of YSYD Cards	>50	>600	52	52
Lost Time Incident Freq Rate*	< 10.14	tbc	tbc	Medical Treatment (MTC)	0	Serious Near Miss	0	Toolbox Talks Issued	2	24	2	2
Number of Recordable Injury Incidents	< 30	1	1	First Aid	3	YSYD	52	Housekeeping Inspections	4	48	4	4
Total Recordable Injury Incident Rate*	< 35.0	tbc	tbc	Total Injuries	4	TOTAL Incidents	4	Emergency Drills Completed	>4	>48	2	2
								Vessel Compliance Checks	30	420	30	30



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# HSE Summary April 2023

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## Progress Update:

### April Incidents

- We experienced 1 Medical Treatment Cases and 3 First Aids in the month of April
- We experienced small fire within the engine room Thursday 26th April where an unidentified oil contaminated spill kit pad was exposed to some sparks from a hot work task being carried out.
- Vessel Daily HSE inspections continue to be valuable on both vessels, these along with the weekly safety walk around is helping drive continual improvement throughout all areas of the yard and both vessels, these inspections were noted as a positive improvement from all internal departments and sub-contractors. SMT member to attend every week.
- 801 took more fuel on board successfully, full communications, effective barriers and sufficient supervision was observed throughout.
- 802 continues to pilot the new Permit to Work System with approx. 95% of new permits now being used daily.
- New wireless emergency alarm system is now in place on 802, system and has had two rounds of testing and is proving to be very effective and a significant improvement from previous units fitted. These new improved units will be implemented onto 801.
- ERT Confined Space Rescue training took place at Greenock first week of April. We also had Fire Warden training 13<sup>th</sup> April, Basic First Aid 19<sup>th</sup> April & harness training 28<sup>th</sup> April.
- Looking to re-implement HAVs controls and some training and awareness on promoting Near Miss Reporting with a view to also remove any perceived blame culture within the business.
- **New HSE Advisor [REDACTED] has joined the business, [REDACTED] comes with a vast experience and will help support the business on driving continual improvements and implement planned HSE initiatives moving forward.**

# 801 Level 0 Programme

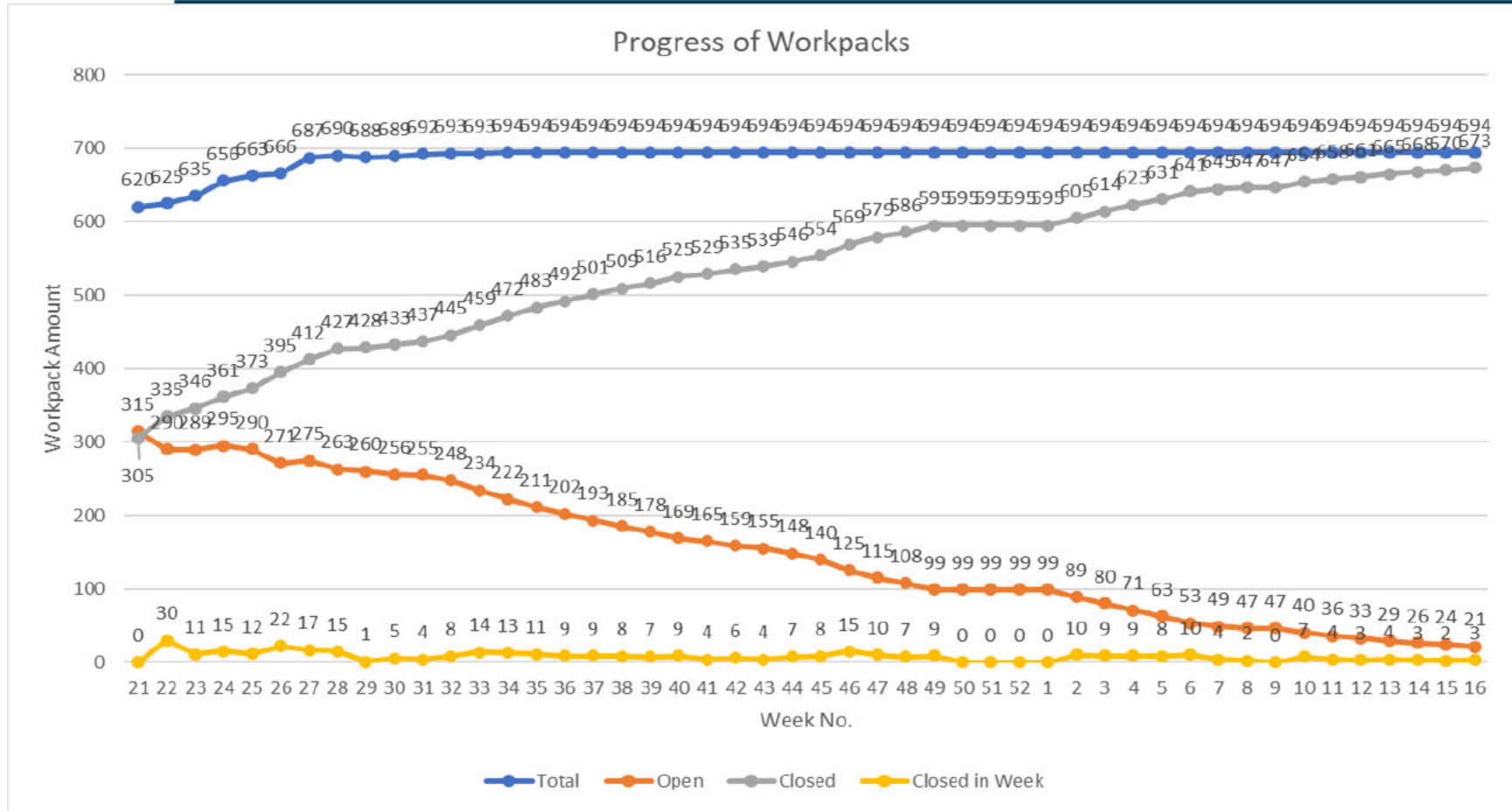
Year		2023												
Month		Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec		
801	Engineering/Design	[Blue bar]												
	Manuals/Certification	[Blue bar]												
	Hotwork Installation	[Blue bar]												
	Painting	[Blue bar]												
	Clam Shell Doors/Ramps		[Blue bar]											
	Mezzanine Decks & Ramps		[Blue bar]				[Blue bar]							
	Lift Install [REDACTED]		[Blue bar]											
	Wheelhouse completion		[Blue bar]											
	Accommodation/Outfit		[Blue bar]											
	Pipework Installation		[Blue bar]											
	HVAC		[Blue bar]											
	Electrical Installation		[Blue bar]											
	Commissioning		[Green bar] Commissioning											
	Dry Dock		[Yellow bar]							[Yellow bar]				
	Sea Trials/MGO								[Yellow bar]					
	LNG Install/ Commissioning								[Yellow bar]					
	LNG Trials											[Yellow bar]		
	Owners Trials												[Yellow bar]	
	Snagging					[Yellow bar]								
	Handover												[Green diamond]	

# 801 RAG Status



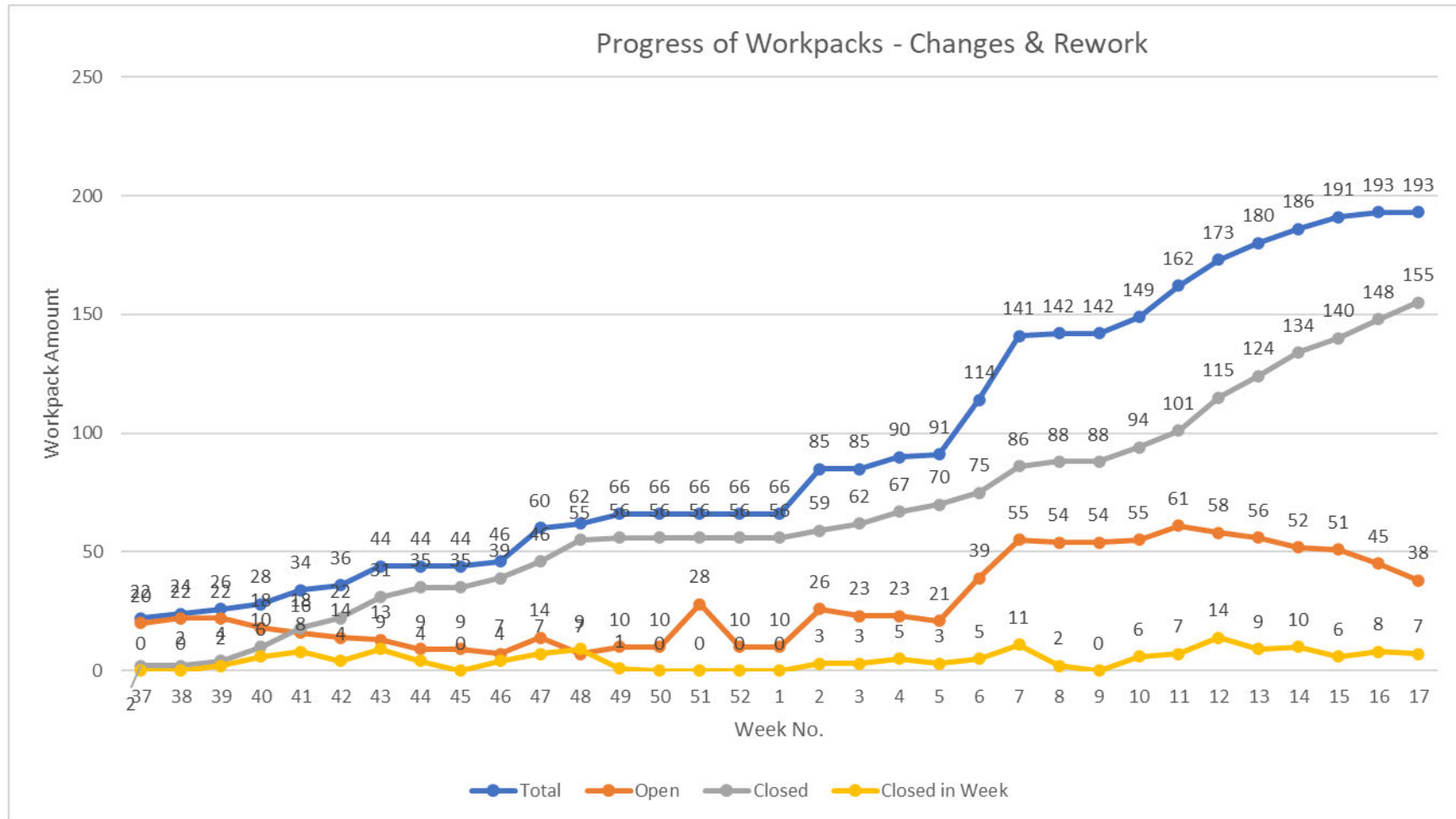
Discipline	Overall Status				Concerns	Actions	Comments
	Jan-23	Feb-23	Mar-23	Apr-23			
Overall Status	A	A	G	G			
Safety	A	A	G	G			
Engineering- Design	R	R	G	G			
Procurement	A	A	G	G			
Hot-Work	A	A	G	G			
Piping [REDACTED]	A	A	G	G			
Piping -	A	A	G	G			
Piping -	A	A	G	G			
Mechanical	A	A	G	G			
Electrical [REDACTED]	R	R	G	G			
HVAC [REDACTED]	A	A	G	G			
Commissioning	A	A	G	G			
LNG	R	R	G	G			
Lift Install	A	A	G	G			
RO-RO Equipment	A	A	G	G			

# 801 Hotwork Work Packs



- 19 Hotwork workpacks to complete

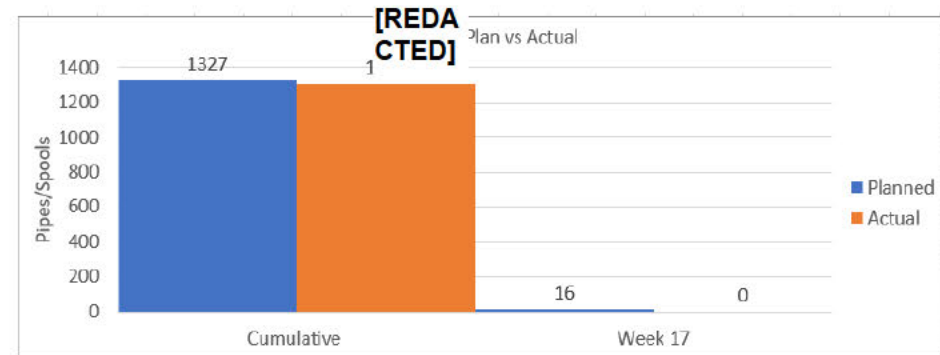
# 801 Hotwork Changes & Rework



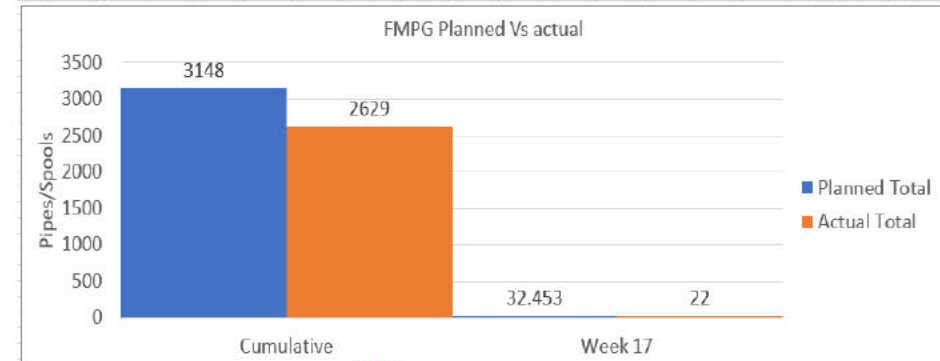


# 801 Pipework Installation

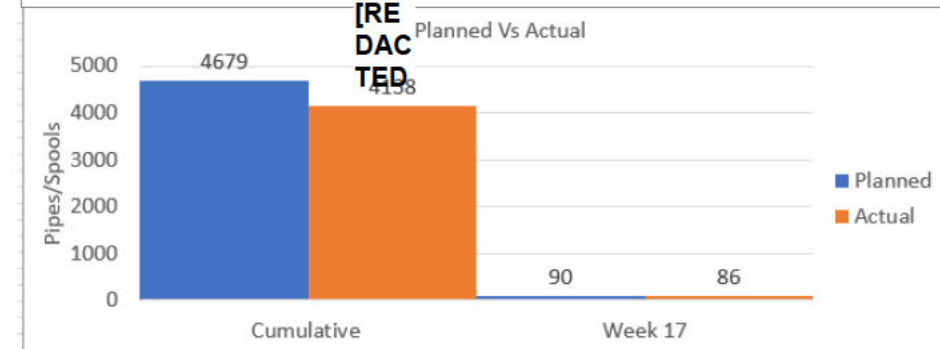
- **[REDACTED] total pipes/spools to install: 1327**
  - week 17 saw a focus on **[REDACTED]** pipework, flushing/testing and bracket installation resulting in no additional hydraulic spools being installed.



- **FMPG total pipes/spools to install: 3147**
- Tasks achieved for week 17:
  - **[REDACTED]** installation in 0303 Pipe & Cable space
  - Completed installation of LA lines in 0303 Pipe & Cable & 0304 STP
  - Began installation of TF site run pipework in 0306 LNG Tank Room Planned complete on 05/05/23
  - Installation of 10" AP line in 0501 void space completed
  - Progressed BW vacuumator modification



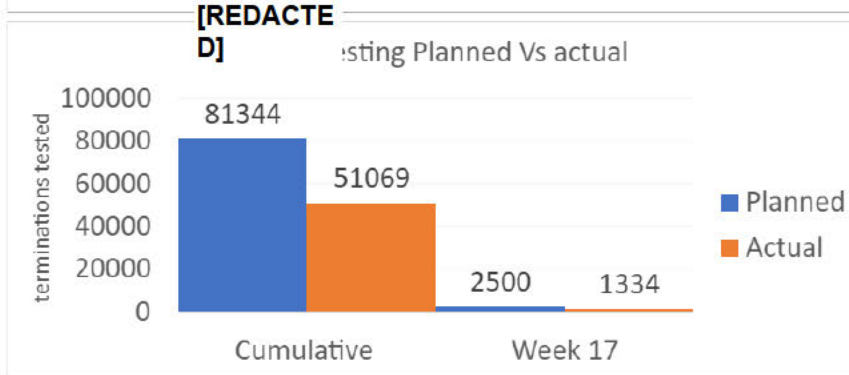
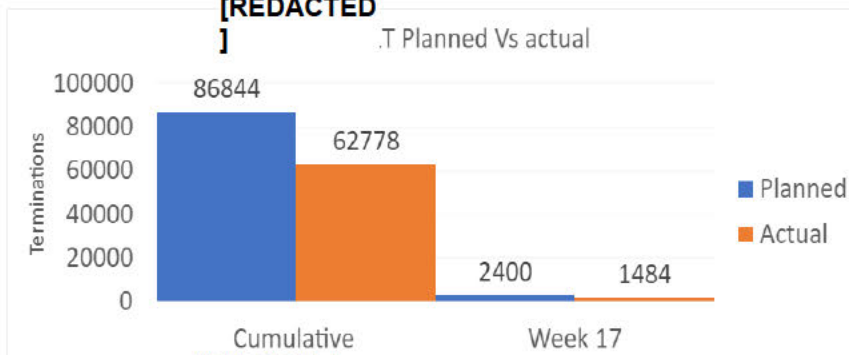
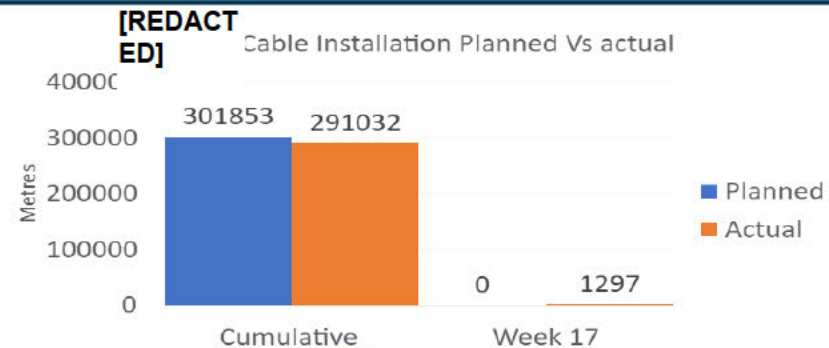
- **[REDACTED] total pipes/spools to install: 5037**
  - DRENCH SYSTEM INSTALLATION
  - CHILLED WATER AHU COMPARTMENTS
  - BLACK/GREY WATER INSTALLATION (TRANSITION POCKETS)
  - VAC TESTING OF BLACKWATER SYSTEM
  - AIR TO WHISTLE
  - SCUPPERS FROM GUN POSITIONS
  - NEW MOD VERIFICATION
  - VARIOUS MATERIAL ISSUES



- Total meterage to install: 301,853

- Total to gland and test: 100,752

- Total to test: 100,752



[REDACTED]

# HVAC Install

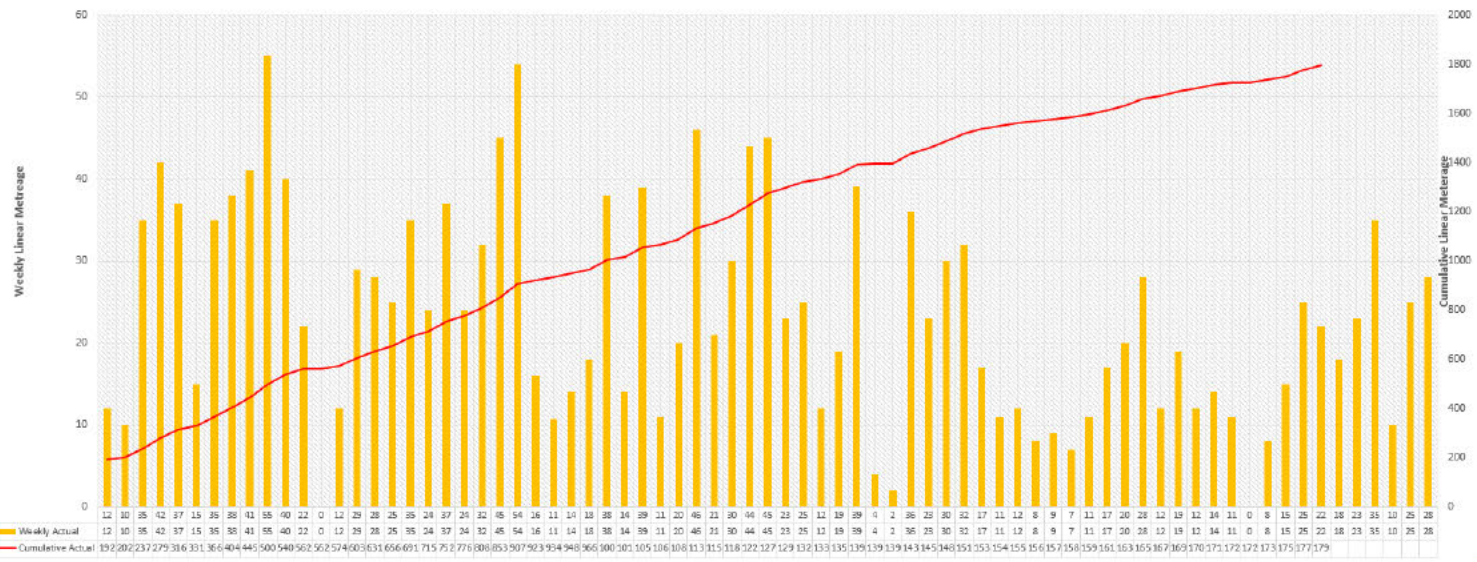


### Activities this month.

- Installation of Domestic Refrigeration Piping-Ongoing. Complete as far as possible by 21 April 2023"
- Installing Ducting, Unit Room 7 Deck Aft-Ongoing. Complete by 30th April (Stop / Start to allow other trades access)
- Supply of Cold & Cool Room Structure-Delivered by 20 April 2023
- Installation of Ducting in 7 Deck laundry and adjacent Store-Complete as far as possible 13 April 2023
- Installing Ducting, Unit Room 6 Deck Fwd-Ongoing. Complete by 30th April (Stop / Start to allow other trades access)

Zone	Total Metreage	Installed Metreage	%age Complete
1	32	29	90.6%
2	35	26	74.3%
3	113	90	79.6%
4	94	73	77.7%
5	14	14	100.0%
6	378	211	55.8%
7	0	0	#DIV/0!
8	280	282	100.7%
9	1096	1027	93.7%
10	198	198	100.0%
11	115	115	100.0%
<b>Totals</b>	<b>2355</b>	<b>2065</b>	<b>87.7%</b>

HVAC Installation Progress 'S' Curve



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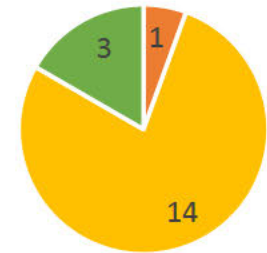
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# Engineering Status

## Modifications and OORs

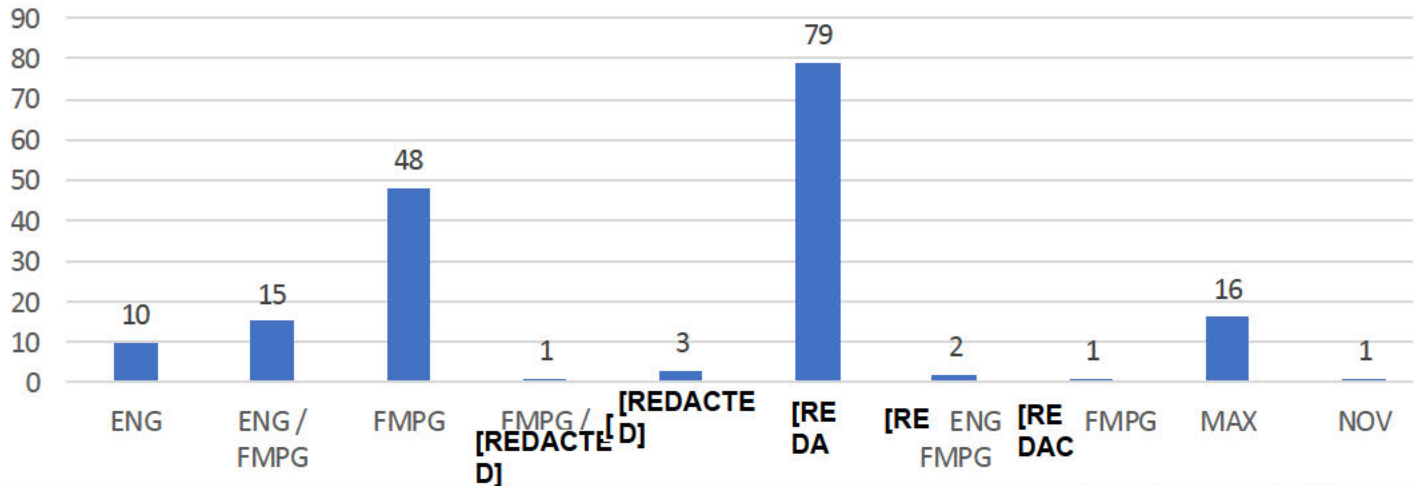
- Out of the 18 OORs submitted for engineering review, 14 are completed, 1 has a solution ready, 3 have solutions being prepared by [REDACTED]
- Historical modifications in the double bottoms require to be checked, access is required to confirm status.
- Out of the 176 outstanding modifications, 51 still require to be priced.

OOB Status

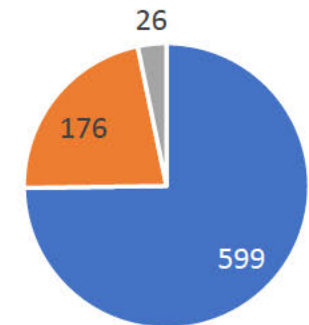


- Solution Ready
- Complete
- Solution in Progress

Outstanding Modifications by Responsibility



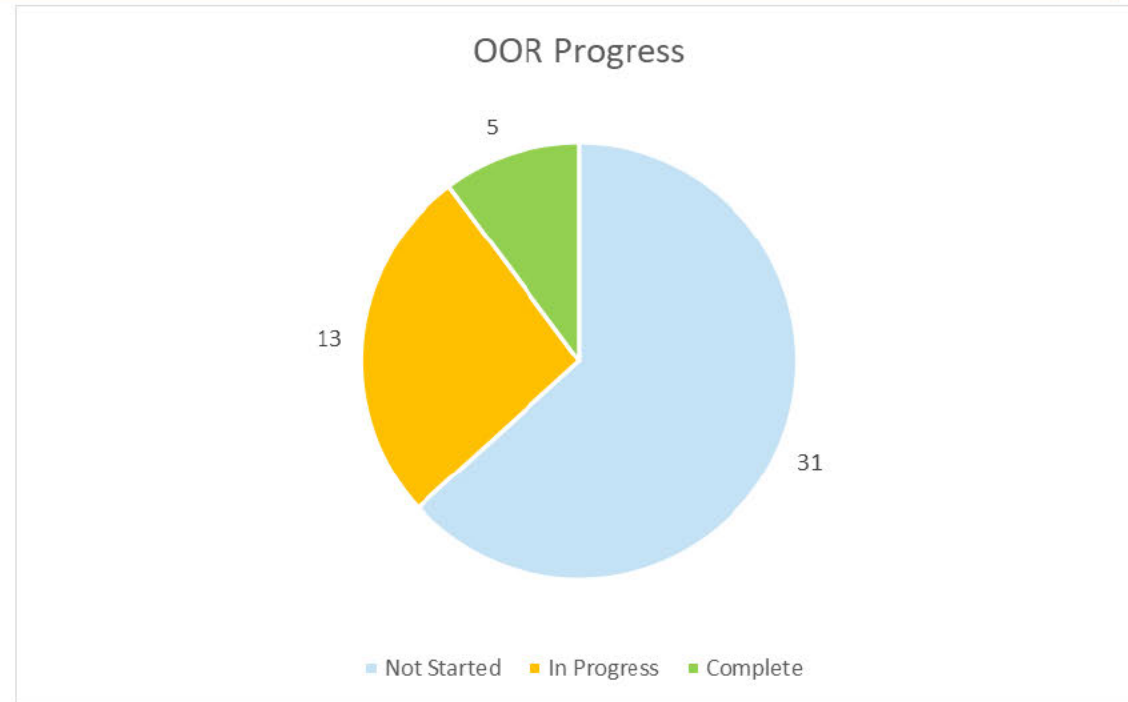
Modification Sheets



- Complete
- Outstanding
- Upcoming

## OOR Progress (Production)

- OOR 149 – Hatches due to be delivered 11/05
- OOR 347 – Stiffening under decks to be verified once engines
- OOR 375 – Hotwork underway for spigots
- OOR 596 – One heeling tank suction pipe complete, other tank being drained before completion
- OOR 506 – Flywheel and shaft guards now underway when possible
- OOR 280 – Hotwork complete on lugs for dampers on hatch, dampers to be fitted now the hatch has been painted
- OOR 533 – Flooring support has been modified in way off thermostatic valve, however CMAL would like further work
- OOR 548 – Position of mass flow meters to be signed off by CMAL after walk around on ship
- OOR 422 – Solution for CPP controls underway



# Weight & Stability

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## Stability

- Intact Stability book was submitted on 9th Dec 2022. MCA's review is ongoing.
- Damage Stability book was submitted on 9th Mar 2023. MCA's review is ongoing.
- Lightship weight distributed and still water bending moments and shear forces calculated. The longitudinal strength calcs submitted t [REDACTED] provided limit curves on 23 Mar 2023 and related figures reflected to the longitudinal strength calcs and submitted to [REDACTED] n 5 Apr 2023.
- [REDACTED] fed with stability database on 17Mar 2023. [REDACTED] loading computer will be integrated after MCA's preliminary book approval.
- Damage control plan and book templates are ready, to be released after stability book's approval by MCA
- Regarding bespoke semi-WT aft lift doors, [REDACTED] and [REDACTED] agreed on the technical boundaries of the integration [as of 05 Apr 2023. [REDACTED] to be invited for FAT of the door. Quotation is expected from [REDACTED] on 03 May 2023. Estimated values are [REDACTED] per door and 8-10 weeks lead time including shipping. It is not a blocker for the programme.
- PO for 802's stability information booklet is raised.

## Weight

- PO for calibrated weights is approved on 02 May 2023.
- Final inclining will be undertaken before sea trials.
- [REDACTED] weight report for 802 received on 12 Apr 2023. Report was investigated and found similar to FMPG's estimates.

## Escape Routes

- Formally submitted to MCA via MSF1261. Scheduled bi-weekly meetings to monitor all aspects of MCA survey and plan approval activity now in pace. Additional comments by MCA were incorporated into the MSF 1261 form and resubmitted on 01 May 2023.

# Ship support activities

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## Manuals

- Site survey of as built equipment concluded (excluding ER/GB space which will be complete during commissioning activity)
- Operations Manual – This will be reviewed on an ongoing basis during commissioning of equipment. and training - FMPG will update the Operations Manual
- OEM Manuals ongoing and shared via shared FMPG-CMAL SharePoint CALMAC feedback positive. The site teams are working closely to identify the remaining elements –watching brief

## Spares

- Formal handover of spares and tooling commenced with 50+ boxes/crates of spares now handed over to CalMac Gourock stores ([REDACTED]) The team will move through the remaining suppliers and cross reference against original agreed spares lists. This activity will continue up to handover
- Engineering team validating original spares list to current design.

## Training

- 801 - [REDA] propulsion platform **now completed** [REDACTED]
- **802 - agreed in principle Q1/2024** 19th until 23rd February 2024 (Propulsion at [REDACTED] or on board) ; 26th February until 8th March 2024 (Engines [REDACTED] ; 11th until 15th March 2024 (Engine Control at [REDACTED] ; 18th until 22nd March 2024 (LNG Pac at [REDACTED])
- PMS and Alarm and Monitoring system timings to be arranged with [REDACTED] in line with agreement below
- Classroom Training onsite then practical demonstration onboard and time afforded on board for following:
  - Nav and comms
  - Internal comms ~( i.e Entertainment CCTV etc)
  - Praxis Alarm and Monitoring
  - Power Management System
- For retrofit switchboards, [REDA] to provide O&M manuals for their modifications FMPG will then train the Ships staff onsite.
- EDICS online training

# Hull 802 – Monthly Report

## Reporting Period: February 2023



# 802 Level 0 Programme



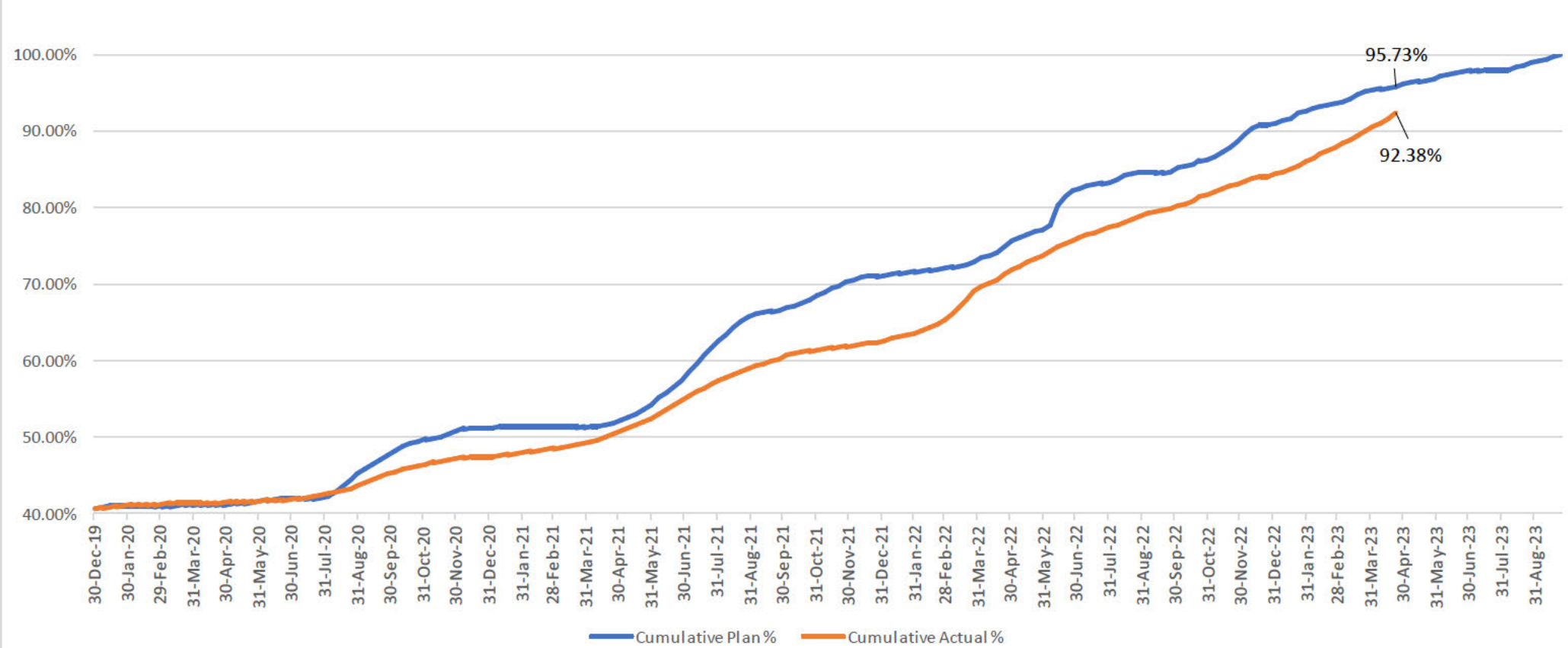
802 Level 1 Programme	Ship Construction																								Sea Trial and Delivery into Service													
Year	2022												2023												2024													
Month	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep							
Engineering/Design <b>[REDACTED]</b>				[Blue Bar]																																		
ICE Workpack Release																																						
Structure (Unit Construction)				[Blue Bar]																																		
Structure (Unit Erection)				[Blue Bar]																																		
Structure (Unit Consolodation)				[Blue Bar]																																		
Hotwork Manufacturing				[Blue Bar]																																		
Hotwork Installation																																						
Clam Shell Doors/Ramps <b>[REDACTED]</b>																																						
Mezzanine Decks																																						
Pipe Manufacture				[Blue Bar]																																		
Pipework Installation																																						
HVAC																																						
Electrical Installation																																						
Architectural Outfit																																						
Launch Prep & Launch				[Blue Bar]																																		
Commissioning																																						
Dry Dock																																						
Sea Trial																																						
Snagging/ Delivery/ In Service																																						

Under Review

# 802 Primary Structure

- Unit Fabrication completion scheduled for end of May 2023.
- Unit Erection completion scheduled for end of June 2023.
- Unit consolidation completion scheduled for end of September 2023.
- 20,049 remaining hours as of April 28<sup>th</sup>, 2023.

802 Primary Structure % Progress S-Curve (Phase 2)



# 802 Status

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## Manufacturing Sheds

- Fabrication complete for units A7/7, A8/7, A9/7, U99, U100, awaiting erection.
- Following 7 deck units in progress: A10/7, AFT & FWD Masts. These are the last units remaining for fabrication completion. Good progress on bridge and both masts.

## Erection and Consolidation

- No units erected on board in April.
- Consolidation of several units in progress: UA8/6, A9/6, A10/6, A11/6, A4/7.
- Consolidation complete, awaiting dry survey: A7/5, A8/5, A9/5, A10/5, A11/5, A6/6, A5/6, A7/6 U85, U86, U89, U90, U97, U98.

## Outfitting

- The main focus in April was continuing installation of major seats for the engine room and generator room.
- Major machinery installation in way of [REDACTED] is complete.
- Outstanding structural modifications in zone 4 in progress.
- Installation of manholes ship wide in progress.
- Installation of outstanding major seats in sub-zone 0402 is complete.
- Stabilizer room platforms in starboard side continued installation, port side ongoing.
- Installation of vertical ladders in way of double bottom tanks is ongoing.

## Pipework Installation

- Checking of manufactured spools in stores ongoing:
  - Total spools checked – 1532
  - Spools fit for purpose – 668 (43.6%)
  - Spools that can be modified – 187 (12.2%)
  - Spools to be scrapped – 677 (44.2%)

Continuing with [REDACTED] CMAL sign-off of over boards: 34%

- Total amount of spools ship wide: 12021.
- Total amount of spools manufactured/procured: 4003.
- Total amount of spools installed on ship: 347.

## Launch

- Launch date - 30/11/23.

## Electrical

- Nothing to Report.

## HVAC

- Nothing to Report.

## Specialist Contractors

- Currently reviewing opportunities and finalizing plan with specialist contractors.

# 802 Issues/ Concerns & Actions

Concern	Action
<p><b>1</b> Resourcing Level: Past 4 weeks operating with a team of approx. 22 employees (13 apprentices). 801 retaining steelworker due to continuous change.</p> <p>Concern that labour maybe allocated to <b>IRE</b> work, business priorities must be understood. <b>DAC</b></p> <p><b>IRE</b> turnaround time to obtain resources is a min of 12 <b>ACTE</b> weeks;</p>	<ul style="list-style-type: none"> <li>• Agree a release date of Steelworker from 801 (15<sup>th</sup> May). 801 to retain a small 'hit squad'</li> <li>• Allocate majority of <b>IRE</b> team to 802 (approx. 75). Team return week 19 (15<sup>th</sup> May)</li> <li>• Consider retuning labour from <b>IRE</b> – 16 steelwork;</li> <li>• Operate day and nightshift when full complement of labour is available</li> </ul>
<p><b>2</b> Workpack Process:</p> <ul style="list-style-type: none"> <li>• Workpack release programme behind curve due to holds and changes.</li> <li>• Workpacks issued in incorrect sequence and priorities</li> </ul>	<ul style="list-style-type: none"> <li>• Continue to work in 'safe areas' priority on the lowers and consolidations</li> <li>• Retract all workpacks and issue in the correct sequence and in line with new plan. New plan will be available 16<sup>th</sup> May, developed by FMPG and fed into <b>IRE</b> single point of truth <b>ACT</b></li> </ul>
<p><b>3</b> Sub-contractors on board</p>	<ul style="list-style-type: none"> <li>• Pipe sub-contractor not on board until end June</li> <li>• Electrical subcontractor not on board until July.</li> <li>• This could have an impact on the <b>critical path with electrical activities projected for 12month;</b></li> </ul>
<p><b>4</b> Identification of inventory in warehouse against the BoM, understanding what's available.</p>	<ul style="list-style-type: none"> <li>• Allocate detailed planner to warehouse. Planning will provide Advanced BoM to warehouse up to one month in advance enabling inventory to be identified in advance.</li> </ul>
<p><b>5</b> Launch Plan: 30<sup>th</sup> Nov at risk due to all of the above. Large scope to be completed in condensed period of time.</p>	<ul style="list-style-type: none"> <li>• Detailed plan to be issued on 16<sup>th</sup> May. Resource profiles will be generated against this plan and launch date will be confirmed;</li> <li>• Review all options to reach-----</li> </ul>

- Comments
- AOB