



Yard Visit Report - Armada 98/2 FPSO

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Abbreviations

FPSO	Floating production storage & offloading
LLI	Long lead items
LTA	Lender's Technical Advisor
ONGC	Oil and Gas Corporation Ltd
PMT	Project management team
RUI	Rely Upon Information
SPBAG	Shapoorji Pallonji Bumi Armada Godavari Private Limited
SPOG	Shapoorji Pallonji Oil and Gas Pvt Ltd

1 Executive summary

This report presents the findings of the Lender's Technical Advisor (LTA) review of the progress of the construction of the Armada 98/2 FPSO in Sembcorp Tuas Boulevard shipyard including the inspection of the premises, offices, fabrication facilities and Ariake FPSO in the yard, carried out by Claude Rouxel, General Manager for Crondall Energy Asia Pacific, based in Singapore, on Friday the 7th of May 2021.

1.1 Inspection plan

Following an HSE induction carried out by S. Raveendran, HSE Manager, the inspection started by a visit of the topsides modules M30, M31 and M20 under fabrication and assembly followed by a complete visit of the Ariake vessel being converted into the FPSO, including the deck, the turret mooring system location, the greenwater protection at the bow, inside the accommodation block and down under inside the engine room.

This visit was carried out under the lead of Tan Suay Tee, Senior Project Manager for Sembcorp and his project team together with the project team of SPOG led by Sanjay Dhir, deputy Project Manager and under the guidance of S. Raveendran, HSE manager.

It was then followed by a debriefing session with Sanjay Dhir and Bumi Armada's representative, Eli Xanthopoulos, after which an overall presentation of the project development and integration of the various modules was shown on a video.

1.2 Summary & conclusions

The consequences of the COVID-19 pandemic have been mitigated and Sembcorp continue to monitor and control the impact on the project schedule by subcontracting significant portions of the work to experienced sub-yards in Batam and Karimun in Indonesia, as well as Singapore.

The overall manpower in Sembcorp yard is now stable and the COVID-19 evolution is monitored very closely: all workers, contractors and clients representatives are submitted to a PCR test every week as well as all visitors to the yard must show a negative test result taken within 72 hours prior to the visit.

In order to accelerate the progress to meet the May 2022 mobilization date, SPOG have taken their own workers to the yard, mainly to provide support for the piping works: today 65 SPOG workers are already working on the project and it will be ramped up to 300 workers through the coming weeks. In addition, and in order to meet the schedule, SPOG's plan is to shorten the time at anchorage prior to sailing to site.

As reported earlier, the most significant impact to the project progress has been so far the late receipt of Rely Upon Information (RUI) from ONGC. Some information is still missing and SPOG is preparing a complete and definitive list of missing RUI. Post visit note – RUI list has been provided by SPOG to LTA and will be reviewed under a separate report.

LTA has also recently received the latest progress report from Borrower (1) and LTA's review of same is currently being finalised.

The findings of the progress reviewed at site, especially considering the hull conversion work seen is consistent with that reported in the Borrower's latest monthly progress report (1).

2 Key findings

2.1 Manpower and activities

SPOG

- The project team of SPOG present in the yard remains stable and includes 80 people in addition to 27 people in Batam and 10 people in Karimun;
- 40 to 50 people from operations of SPOG will join them in a few months from now once the accommodation block is completed on the FPSO;
- 100 additional people will join the project team when commissioning starts.

SEMBCORP (Singapore & Karimun)

- A total of 1,000 workers are dedicated to the project;
- Large parts of steel works have been carried out in Karimun such as: helideck, flare boom, pedestal crane, pipe rack structure etc... and have been transported to Singapore and assembled in the yard or directly on the FPSO;
- The main activities in the yard are now taking place in two main areas:
 - At the fabrication and assembly area of the PC topsides modules: M30, M31 and M20;
 - On the ship itself, mainly inside the accommodation blocks, at the bow of the ship inside the tanks that have been cut-off to receive the Turret Mooring System (TMS) compartment to be located above the Mating Cone Module already in place, and inside the engine room where all key equipment has been received and installed but various work on valves, piping and engine room small equipment is ongoing.

BATAM

- 247 workers are working on the modules fabrication in Batam under Sembcorp management where module M20 is being built and remaining decks of modules M30 and M31 are being completed before being shipped to Singapore.

ABB & BHGE – M60 E-House and M75 Power Generation – WHRU Fabrication

- 103 workers are now building the M60 E-house module at ABB facilities;
- 235 workers (up from 135 workers end of September) are involved on the M75 module at BHGE facilities.

VME Process Systems (VME)

- At VME yard in Batam, 670 workers are completing modules M53 and M90 and building M40, M51, M54 as reported. LTA notes that this yard visit did not include a visit to the Batam yard which is still not feasible today on short notice given the travel restrictions back and forth to Indonesia and the requirements for quarantine.

NOV/APL

- 296 workers are currently dedicated to the construction of the turret mooring system at Profab yard in Batam.

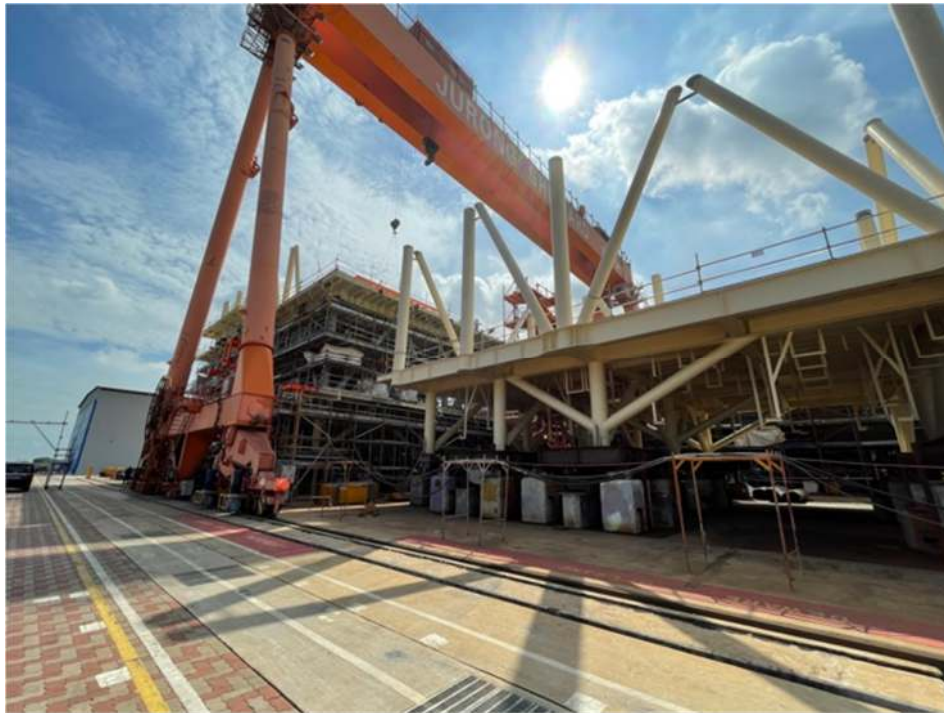
The total manpower today working on the project is close to 2,600.

2.2 Key Equipment Delivery Schedule

The expected delivery schedule of some of the key equipment for integration onto the FPSO is as follows:

- STP compartment: to be delivered mid-June to the yard for integration (1 month);
- Geo-stationary module of the TMS: to be delivered in September;
- VME Modules: E-House, 14th of June; M75, 1st week of August; last one of the modules by September;
- M30, M31, and M20: all to be completed by September;
- One long lead item, Cooler: to be delivered by August.

2.3 Photos taken during the visit showing the progress



Figures 2-1 View of M30 and M31 modules under fabrication in the yard



Figure 2-2 View of M31 showing the deck where the booster compressors will be located.

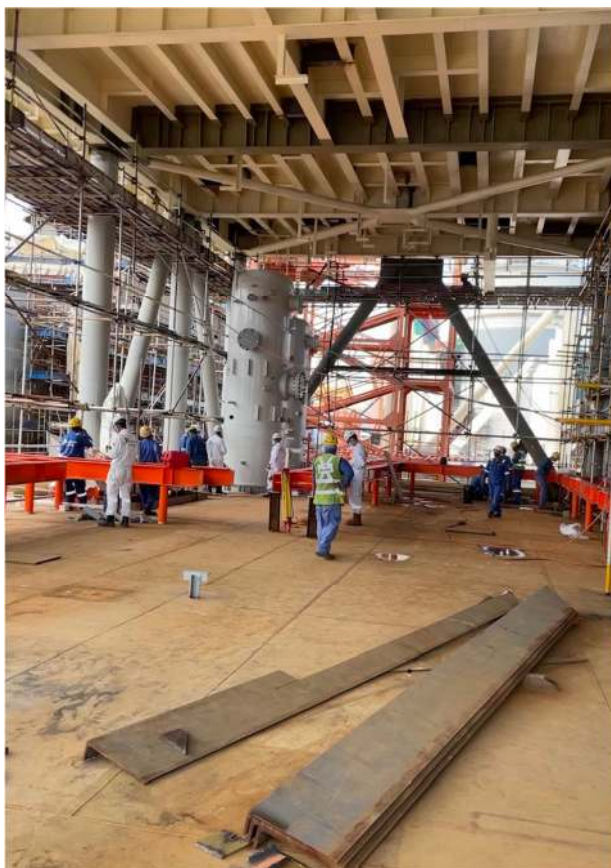


Figure 2-3 Inside view of Module M30



Figure 2-4 Piping ready to be installed on M30



Figure 2-5 View of the green water protection at the bow



Figure 2-6 View of the large opening inside the tanks for turret mooring to be fitted



Figure 2-7 View of the deck showing the pipe rack (in orange), the topsides supports, one of the crane pedestal in place, the green water protection at the bow.

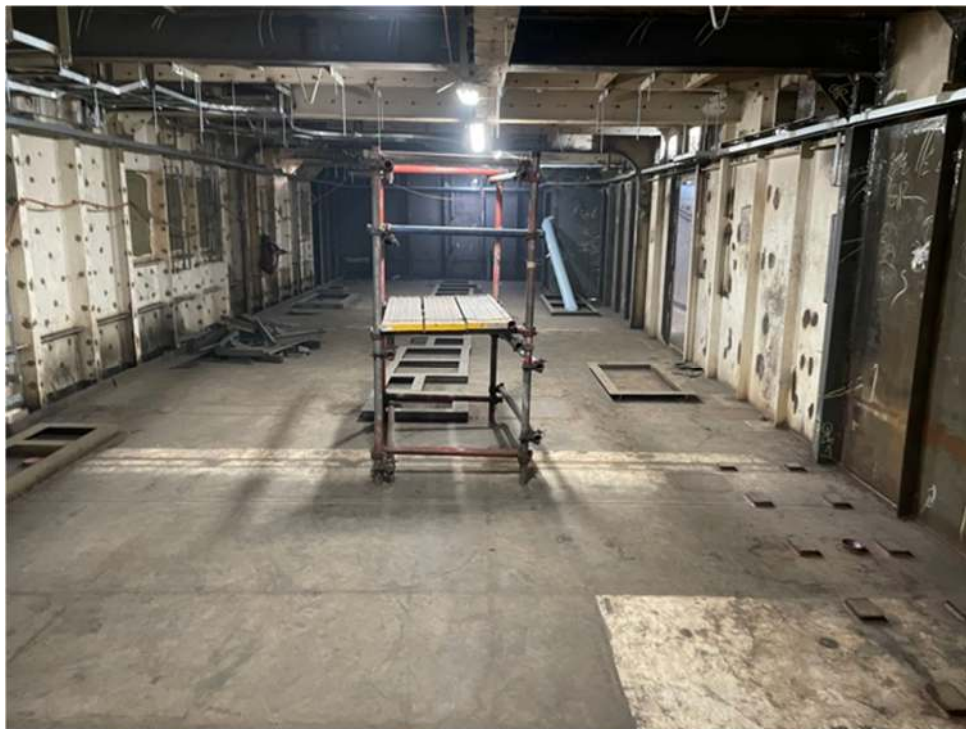


Figure 2-8 View inside the accommodation block



Figure 2-9 View inside the engine room