

Brunei LNG

Improvements in Turnaround, Permit-to-Work & Engineering Rotating Equipment

Brunei Liquefied Natural Gas (BLNG) is the first LNG plant of its kind in the Western Pacific, an ambitious joint venture between the Brunei government, Shell and Mitsubishi.

Completed in 1972, the 5-Train, 130 hectare facility with almost 800 working personnel focuses on large scale liquefaction and transportation of natural gas which commands a sales volume of 6.71 million tonnes of LNG annually.

BLNG has established itself as one of Brunei's major revenue earners and is expected to have a plant life until the year 2070.

"Renoir's structured approach helped us a lot in achieving in our goals in Turnaround, managing work permits and preventive maintenance for rotating equipment. Besides achieving the results in these areas, our staff learned a lot from them how to manage change in a structured way. Another job well done!"

Klaas Van Ommen, Deputy Managing Director

Key Results

Implementation of new Management Control Systems in Turnaround, Permit-to-Work and Engineering Rotating Equipment

No PTW-related incidents

Improvement in PM:CM Ratio for Rotating Equipment

Achievement of all critical schedule and quality milestones for the next major turnaround

PROPOSAL

Following from the success of the assignment to deliver improvements in maintenance execution, Renoir was engaged to continue the change program as a 26-week project focusing on Turnaround, Permit-to-Work (PTW) and Engineering Rotating Equipment (ERE). The key objectives were around improving the safety management system in BLNG and the reliability of major units and equipment in the plant, with the goal of eliminating PTW-related incidents, achieving zero days delay in Turnaround and improving the ratio of preventive maintenance to corrective maintenance (ie PM:CM Ratio) for rotating equipment.

Workstream	Measure of Success	Target
ERE	PM:CM Ratio for Rotating Equipment	40:60
Turnaround	TA Schedule Performance	0 days delay
PTW	PTW-related incidents per 100,000 manhours	0 cases

PROJECT APPROACH

The Project kicked off with Renoir's Focus Process®, developed over many years, based on experiences with hundreds of successful assignments. It ensured that consistent and sustainable outcomes were achieved. The process took BLNG's staff through a learning experience that promoted commitment and ownership of the solutions being implemented, whilst retaining the company's essential organisational goals and corporate identity.

To achieve maximum impact and buy-in, a "Management Action Team" (MAT) was set up, led by BLNG's Business Improvement department, with direct involvement from Turnaround, ERE and PTW managers to directly engage the respective departments and related interfaces in implementing the required improvements. A select team of BLNG staff were seconded to the project as full-time task force, receiving training and working together with Renoir consultants to identify the improvement opportunities, design the solutions, engage key stakeholders and drive behavioural change throughout the company.

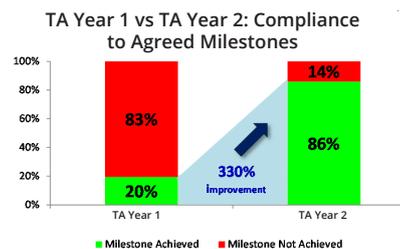
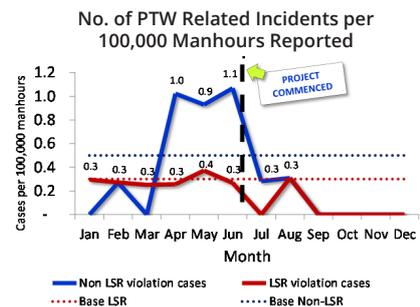
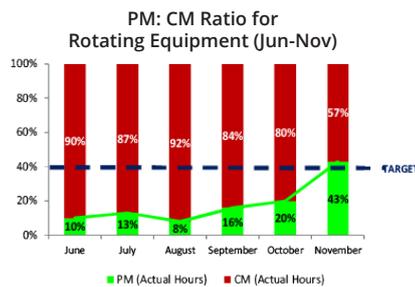
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PROJECT DELIVERABLES

Renoir, together with the BLNG MATs, designed, developed and installed new Management Control Systems (MCS) and work processes in the Turnaround, ERE and PTW departments. The MCS for each workstream emphasised a holistic, proactive approach to Turnaround planning and coordination, PTW management and incident prevention, and rotating equipment management and root cause analysis. KPIs and the associated reporting mechanisms provided managers with constant feedback on the performance of their staff and equipment, while multiple feedback loops were installed at various stages of the process, thus empowering managers to take effective management actions and reduce performance gaps at appropriate levels and intervals.

Once the new ways of working were agreed upon by BLNG senior management, the project team set about driving behaviour change across the plant. Over 400 people (half of BLNG) were directly impacted by the changes, and Renoir worked closely with all parties to provide training, coaching and day-to-day assistance. As a result of the changes in systems and behaviours, there were no PTW-related incidents in the plant for the entire six-month duration, while PM:CM Ratio for Rotating Equipment increased to 43:57. Meanwhile, preparation for the next major turnaround campaign has achieved 86% compliance to all scheduled milestones. With Renoir providing continued support until the conclusion of the major turnaround, the journey continues towards a timely and flawless campaign.



THE RENOIR GROUP

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More significantly, the new Management Control System has allowed BLNG's management to make informed decisions about strategies and plans, and has provided a stable platform for developing a culture of continuous improvement. It has also allowed for a smoother coordination of activities within BLNG, thus ensuring that safety and reliability continue to be key focus areas for years to come.

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