

BLNG 2013 Turnaround Improvement

The Capacity to See. The Power to Change.

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 more than 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.

"At this point we are at least 200% better than last time. I have more peace of mind now, knowing that I have covered all my bases."

Turnaround Engineer

Key Results

Implementation of MCS in the Engineering Turnaround Department

Clear departmental KPIs, Work Processes & System

Improvement in Turnaround process

Improvement in Turnaround preparation

Improved interface and alignment

Achievement of all critical milestones and quality criteria

THE PROPOSAL

Following from the success of the first Renoir project with BLNG, namely BLNG 2012, which delivered improvements in maintenance execution; Renoir was engaged to continue the change program as BLNG 2013, a 26-week project focusing on Turnaround, Permit-to-work (PTW) and Engineering Rotating Equipment (ERE). With regards to Turnaround, BLNG had previously experienced significant delays and quality issues for the past five years. Renoir was therefore engaged to improve the Planning, Coordination, Execution and Closure of Turnaround, beginning with the 2013 campaign.

PROJECT APPROACH

The Project kicked off with Renoir's Focus Process™, developed over many years, based on experiences with hundreds of successful assignments. In addition, to develop solutions for 'Turnaround Improvement' in BLNG, the upstream and downstream turnaround processes was studied and best practices were customized and incorporated throughout the entire system. 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" was set up, led by BLNG's Turnaround manager to directly engage the ETA (Engineering Turnaround) department in implementing the required improvements.

PROJECT DELIVERABLES

Renoir together with the BLNG TA (Turnaround) Management Action Team was able to design, develop and install improved Management Control System (MCS) and work processes for the ETA department. The MCS and work processes provided complete information loops throughout the various stages of Turnaround empowering managers to take effective management actions and monitor the progress of Turnaround Planning, Execution & Closure. The 'House of Turnaround' was developed

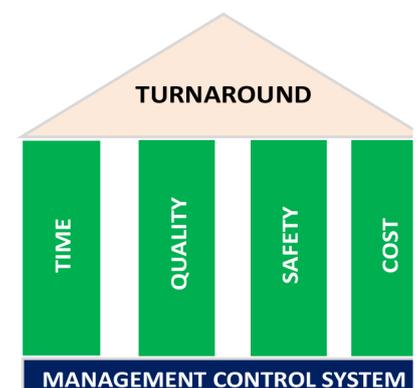


Diagram A: House of Turnaround

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(refer Diagram A), which stands on four pillars. These four pillars require the support of an effective MCS & are key to achieving a successful Turnaround, i.e. one that is executed safely, with quality, and within schedule & cost.

For the Turnaround team, clear work processes, roles & responsibilities, key performance indicators and performance reviews were established. Interfaces were clearly defined and improved with all the departments and contractors. The BLNG 2013 project led to the development of a holistic system that will go through a rigorous planning and preparation process to ensure efficient execution and timely closure. Compared to the previous year, Turnaround milestone compliance has been improved to 86% compliance to detailed milestone (refer Diagram B), and 100% compliance to critical milestone. Just two months into the project implementation, the Turnaround Audit (TAR2) conducted by external Shell representatives concluded that there is "BIG Improvement in the Turnaround Process".



*Detailed TA Planning phase still ongoing, will conclude on 1 Mar 2013 (20 out of 25 milestones are not yet due)

Diagram B: Milestone Compliance

The rigorous implementation of the elements in the seven phases of Turnaround (refer Diagram C) has led to realization of key results such as Schedule & Quality Compliance (refer Diagram D) and is expected to deliver its full improvement by the end of the implementation (refer Diagram E).



Diagram C: TA Process & Milestone

THE RENOIR GROUP

Renoir Consulting is a world leader in sustainable, implemented change. Founded in 1994, Renoir has offices located in North and South America, UK, Europe, Turkey, Middle East, Southern Africa, India, Pakistan, China, South East Asia and Australasia. With over 350 fully employed and highly trained consultants, their work across a wide range of industry sectors gives them a broader perspective of the issues facing your business, allowing them to be sensitive to your unique challenges, culture and specific business issues. This cross-pollination ensures truly effective, rapid and sustainable solutions.

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In conclusion, the improvement in Turnaround is evident through the current outcome; and with every phase the Turnaround department is enabled to take actions to improve their performance and their interfaces with all the departments.

CURRENT RESULTS		EXPECTED OUTCOMES	
TA Schedule Compliance to <u>Critical</u> Milestones	100%	Frozen and well-defined scope	Contractor Mgmt & Certification
TA Schedule Compliance to <u>Detailed</u> Milestones	86%	Aligned activities across depts	100% material availability
TA Quality Compliance to <u>Critical</u> Milestones	88%	Timely & quality TA execution	Systematic closure process

Diagram D: Current Results

Diagram E: Expected Outcome

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