

Targeted Maintenance on LNG Train Improves Performance by 1.5% Using AMS™ Suite: Equipment Performance Monitor



RESULTS

- 1.5% performance increase following maintenance to specific under-performing equipment
- Identified maintenance activity responsible for a 24% drop in the performance of a compressor
- Identified the cause of step changes in performance
- Benchmarked performance against corresponding equipment on each train



APPLICATION

Production of Liquefied Natural Gas (LNG)

CUSTOMER

Atlantic LNG Company of Trinidad and Tobago - Point Fortin, Trinidad and Tobago

CHALLENGE

The Atlantic LNG Point Fortin LNG plant is owned by a consortium of operating companies; BP, British Gas, Repsol, Suez and NGC. The plant has 4 trains exporting LNG to terminals within the USA, Puerto Rico and Spain. Total capacity from all 4 trains is over 15 million metric tonnes of LNG per annum and 30,000 bpd of Stabilized Natural Gas Liquid (NGL).

Atlantic LNG required a performance monitoring system to evaluate and quantify the operating performance of various critical equipment throughout the 4 trains. In order for Atlantic LNG to sustain production goals, a performance monitoring system was necessary to support the existing maintenance management strategy to maintain equipment availability and reduce unexpected downtime.

SOLUTION

Emerson's AMS Performance Monitor meets Atlantic LNG's requirements for a centralized performance monitoring solution. In addition, a team of performance experts from Emerson provide impartial consultancy and expertise to interpret the key performance indicators. Working alongside reliability engineers from Atlantic LNG, AMS Performance Monitor identifies changes in asset performance degradation so predictive maintenance strategies can be implemented.

“AMS Performance Monitor is being used to determine the events that cause a loss in performance across each of the trains, allowing us to push our operating boundaries to generate greater throughput.”

Kevin Harper,
Reliability Engineer



For more information:
www.assetweb.com



AMS Performance Monitor currently analyzes the performance of different types of equipment including compressors, gas turbines, fired heaters and turbine generators, with over 200 additional units to follow.

Engineers used AMS Performance Monitor to analyze the historical performance of equipment on train 2 prior to a necessary scheduled shutdown. This enabled maintenance to specifically target those units scheduled for OEM replacement and included a number of gas turbines that showed a drop in performance. Subsequently, when the train returned online, performance increased by 1.5%.

AMS Performance Monitor provides analysis of performance results on multistage machines, allowing degradation to be pinpointed. The assessment of a propane compressor on train 2 was particularly significant. AMS Performance Monitor showed the compressor was 24% below manufacturer's design conditions, showing a loss of 380 te/hr in throughput.

Atlantic LNG has been able to determine the exact time of major step changes in performance. On train 2, Atlantic LNG determined when there was a negative shift in performance. A similar scenario on a propane compressor on train 1 found that a diaphragm change was the cause of a performance loss step change of 15% in the first stage.

In addition, AMS Performance Monitor is used to analyze the frequency of maintenance and washing events on the gas turbines.

RESOURCES

Presentation (Emerson Global Users Exchange)

www.PMO.Assetweb.com/casestudies/atlanticlng.ppt



Propane Compressor - Flow/Power Deviation KPI.

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AMS Suite: Equipment Performance Monitor powers PlantWeb with predictive and proactive maintenance through performance monitoring of process and mechanical equipment to improve availability and performance.

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