

Amerada Hess Boosts Gas Export By 10% Using AMS™ Suite: Equipment Performance Monitor



RESULTS

- Compression train performance increased by over 10%.
- \$800/hr increased gas export production following identification of a faulty compression train recycle valve.
- Identified poor performance of a centrifugal compressor operating on a parallel train.
- Detected process limiting instrumentation drift.



APPLICATION

Production of oil and gas from the Bittern and Guillemot fields on a Floating Production Storage and Offloading (FPSO) operating vessel.

CUSTOMER

Amerada Hess, Triton FPSO, Central North Sea.

CHALLENGE

The Triton FPSO is critical to Amerada Hess for upstream petroleum that forms part of the field's subsea infrastructure. The efficient operation of centrifugal compressors and seawater injection pumps are crucial to maintain a constant stream of export gas that produce the equivalent of 7% of UK oil and gas requirements.

Wood Group Engineering handles the overall maintenance management for the FPSO from an onshore base in Aberdeen, with Sulzer Wood handling the maintenance of the equipment. The customer's well defined requirement was a proven performance solution, to pinpoint degradations in equipment performance from a remote location with the goal of reducing downtime, scheduling maintenance and ultimately increasing annual export production.

SOLUTION

AMS™ Suite: Equipment Performance Monitor was selected as the preferred solution by Amerada Hess, Wood Group Engineering and Sulzer Wood. It provides equipment operational data and performance monitoring results, from the FPSO, for remote analysis by operators, on and offshore. AMS Performance Monitor allows operators to assess the effect of equipment performance in terms of throughput, downtime and stability - assisting operators to move to predictive and proactive maintenance programs.

“We need to maximize production from the fields, and that calls for us to know how the equipment is performing within the critical processes.”

David Stewart,
Triton Support Services Manager
Wood Group Engineering



For more information:
www.EmersonProcess.com/QBR
www.AMSPerformanceMonitor.com



Immediately, AMS Performance Monitor realized true process benefits by the identification of performance shortfalls. The centrifugal compressor train was operating below expected levels, when compared to manufacturer's design data, showing a substantial level of lost production. Using AMS Performance Monitor, the individual bottleneck compressor was singled out for targeted maintenance. This allowed engineers to focus attention on a solitary compressor, vastly reducing the required downtime. The resultant +10% polytropic efficiency performance recovery permitted a further 10% increase in throughput, directly impacting the overall gas export levels.

Compression trains rely upon accurate temperature instrumentation as performance indicators and for effective control scheme implementation. Accurate readings directly impact the performance interpretation and volume of gas compressed/flowed by the machine. Using the thermodynamic based models to characterize performance, AMS Performance Monitor's ability to distinguish between performance deviations and instrumentation drift, for all sections of the compression trains, allows true evaluation of performance. Early identification of instrumentation error, immediately communicated by Emerson's support team, considerably reduced the total loss of production.

Using AMS Performance Monitor to diagnose declining equipment performance allows engineers to rely upon the accuracy of results. Complex performance attributes are broken down to individual components, permitting swift identification of problems. AMS Performance Monitor helped to identify a faulty recycle valve on the second compression stage of a train. The additional recycle flow reduced the total gas export from the train such that production levels fell dramatically. With AMS Performance Monitor, personnel were able to promptly identify the root cause and take immediate corrective action.

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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.

“AMS Performance Monitor allows us to improve operational performance, by applying best-in-class technology, to maintain production and reduce the possibility of downtime.”

Denis Thomson,
Rotating Equipment Co-ordinator, Triton Project
Wood Group Engineering

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