



Brüel & Kjær Vibro

A member of the NSK Group

Case study – How we improved machine monitoring and diagnostics for Williams compressor stations

Application Note



Oil & Gas

The VC-8000/SETPOINT® monitoring system from Brüel & Kjær Vibro (B&K Vibro) was selected by Williams as a replacement for their legacy machine protection system at several compressor stations. This cost-effective decision was based in part on the advanced machine condition monitoring capability that came with the system, which doesn't even require a server or license fees.



Figure 1. Mark Hullinger standing in front of the VC-8000/SETPOINT® system

Vast energy infrastructure

Williams (NYSE:WMB) owns and operates an extensive energy infrastructure for natural gas, natural gas liquids and olefins that includes pipeline, processing stations and olefin production facilities throughout North America. The 3,900-mile-long Northwest natural gas pipeline is a critical part of that infrastructure.

Challenge

It is necessary to monitor each of the compressor stations on the pipeline to assess the health of the compressor drive trains and to protect them from a catastrophic failure. Many of the machines have aging machinery protection systems. “Our monitoring equipment was obsolete, and we couldn't get the optimal support we needed.” says Mark Hullinger, Rotating Equipment Engineer for 15 of the compressor stations on the

pipeline. “Consequently, we didn't have confidence in the data provided by the legacy system.”

Solution

The VC-8000/SETPOINT® system from B&K Vibro not only provides complete, reliable protection of the machines, but also provides advanced diagnostic capability without requiring a separate condition monitoring server. “With regards to monitoring systems; anyone can monitor vibration amplitudes” says Mark. “VC-8000 actually gives us vibration spectrum plots and other diagnostic functions, which is a big difference for people who want to diagnose their machines more accurately. A hand-held analyzer could provide spectrum plots, but then you aren't getting the real-time data that VC-8000 provides duly synchronized with changing process parameters”.



Results

Since the system was installed, a number of faults had already been detected:

- Damaged thrust bearing on an engine turbocharger
- Crosshead looseness on a compressor
- Worn valves on a compressor

B&K Vibro has been working closely with Williams in helping them to increase machine reliability and to reduce life cycle operating and maintenance costs on their critical

machines. B&K Vibro has already installed the VC-8000/ SETPOINT® system on seven compressor stations on the Northwest pipeline to monitor each of the diesel engine and reciprocating compressor units. Three of these are also being condition monitored by B&K Vibro and there are plans to extend this to the other four compressor stations. Machines at the Williams gas processing plants Opaland Ignacio are also being monitored by B&K Vibro. Mark summarizes: “Before, we had two or three different systems. Now, we can standardize on one system”.

LEARN MORE AT
www.BKVibro.com



Contact Us

Germany

Brüel & Kjær Vibro GmbH
Leydeckerstrasse 10
64293 Darmstadt
Germany

Call: +49 6151 428 0
Fax: +49 6151 428 1000

Denmark

Brüel & Kjær Vibro A/S
Lyngby Hovedgade 94, 5 sal
2800 Lyngby
Denmark

Call: +45 6989 0300
Fax: +45 6989 0301

USA

BK Vibro America Inc.
1100 Mark Circle
Gardnerville NV 89410
USA

Call: +1 (775) 552 3110