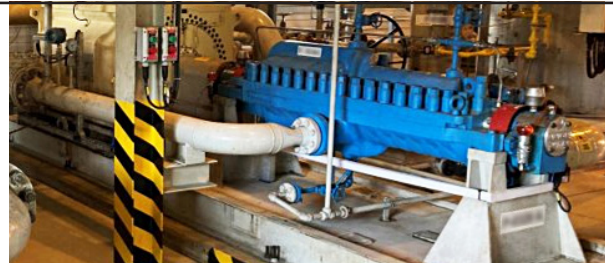


European Oil and Gas Processor Avoids Process Failures by Using Edge Analytics and Expert Software

RESULTS

- Cost savings by avoiding equipment failures
- Time savings through clear direction to teams
- Improved operations with a deeper understanding of machine conditions



APPLICATION

Modernization of motors, pumps, gear boxes, and compressors at an on-shore oil and gas processing facility.

CUSTOMER

European oil and gas company processing over 350M cubic meters of gas and over 350K tons of oil per year.

CHALLENGE

Safety and profit concerns drew a European oil and gas processor to modernize their equipment and processes. Critical assets had been equipped with obsolete or limited machine monitoring systems. In addition, completing routine inspections using handheld vibration data collectors was not possible for some bearings due to protection covers and enclosures.

The lack of reliable asset condition information proved costly and set the stage for inefficient maintenance strategies that were mostly limited to preventive activities and reactions to failures.

Another incentive for change was environmental protection. The company considers sustainability as key to its mission and knew that by using technology more efficiently and improving maintenance procedures, they could reduce potentially harmful impacts to the surrounding environment.

SOLUTION

The customer chose to work with Emerson to design a solution where data could be used easily to avoid equipment failures and — perhaps just as significantly — to plan improvements. They knew that by obtaining knowledge and a deeper understanding of what is happening with the machines, they could improve operations and maintenance practices.

“We needed to go from purchase to modernization very quickly. We achieved our goals because Emerson’s solution was easy from installation to configuration. The solution continues to be easy in condition monitoring, vibration analysis, and embedded expert guidance.”

Onsite Automation Engineer

The team assessed the criticality of each asset based on its contribution to continuous production and added wireless vibration sensors to certain motors, pumps, gear boxes, and compressors. The non-intrusive solution meant that no new wires and no additional cabinets were required to gather the data, which cut installation expense and time.

With the addition of sensors came valuable data that could tell the customer teams when a piece of equipment would need maintenance. AMS Machine Works gathers the data and includes PeakVue technology, which delivers automated diagnostics and assists the customer team as they do not have a reliability team in-house. The solution gathers more than vibration data. Temperature data, for example, can help the customer have relevant equipment information to enrich condition analysis. Used together, vibration and process data will help them save daily wear and tear on machines.

If conditions warrant, the DCS operators receive an alert indicating that a piece of equipment might need attention. The alert, fed by the edge analytics software in AMS Asset Monitor, provides the operator with enough information to assess criticality, gives them the information required by a technician to check field conditions, and provides data required by a vibration expert to assess the next actions. For example, if the analysis software indicates that bearings require lubrication, the operator can mobilize the proper team and tell the technicians what equipment they will need, saving trips to and from the field.

The customer team now benefits from data as frequently as needed without having to send technicians out monthly to gather it. The data is shared among the DCS, historians, PLCs, and local HMIs for analysis. The data shows them potential areas of improvement and then helps them prove their successes.

The customer no longer runs to failure and can plan their downtime. They can optimize the production schedule and avoid urgent equipment requests and the associated process failures. And with an eye on the environment, the customer now knows when to adjust their process variables to avoid potential contamination of the surrounding community with wasted process materials.



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