Case Study

i-ALERT®

i-ALERT Identifies & Avoids High-Risk Operations, Preventing Costly Downtime & Environmental Impact

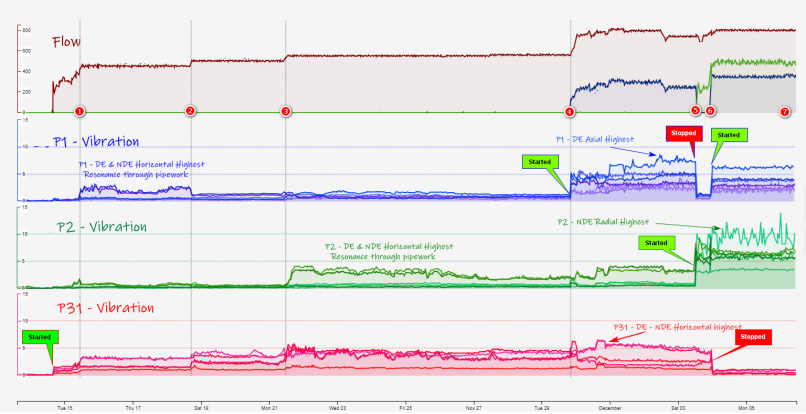
Background

A large refinery was experiencing issues with a set of crude feed pumps in parallel operation. i-ALERT sensors installed on these pumps were showing high vibration levels multiple times during operation, indicating an increased risk of failure.

A large combination of flows and running pumps are possible to accommodate varying demand to keep the refinery running. With this flexibility in operations, the refinery struggled to identify when the suboptimal pump operation, indicated by high vibration, was occurring.

The ITT Impact

i-ALERT provided detail to identify and avoid high-risk operation, allowing the plant to continue running with no unplanned downtime while a long-term control system is implemented.



Problem

Certain operating modes resulted in high vibration with high risk of pump failure and downtime. Failure and downtime on these pumps would have significant financial impact to the facility.

Solution

Due to the fragility of these pumps and this service, a full review of the vibration versus flow was collated and revealed a level of resonant vibration through the pipework to the offline pumps, at different operational flow rates.

Based on the i-ALERT data collected, specific operating scenarios with higher risk of failure were easily identified. This information enabled the refinery management team to operate the pumps in verified conditions, reducing the risk of damage to the pumps and maintaining availability while a long-term automated pump control system is put in place.

The continuous monitoring of the pumps via the i-ALERT system allowed for identification of risk and avoidance of seal failure, loss of containment, bearing failure and large-scale repairs.