Case Study:

AI PREDICTIVE MAINTENANCE PREVENTS BATCH LOSS AND PRODUCTION SHUTDOWNS

CHALLENGE

WFI (water for injection) pumps and AHUs (air handling units) are critical to ensuring sterility in pharma manufacturing. Failing to anticipate an issue with a motor on WFI pumps or AHUs could cause batch loss or production shutdowns. Batch losses cost time and money, especially when manufacturing products like biologics with expensive APIs (active pharmaceutical ingredients).

APPROACH

JHS installed 100 wireless vibration sensors with AI features to monitor the health and performance of WFI pumps and AHUs. Using the data collected from the sensors, a subject matter expert and the AI can work together to map each machine's patterns and identify any issues. By analyzing deviations from baseline performance, JHS team members can issue a work order before a machine breaks and causes a larger disruption.

AT-A-GLANCE

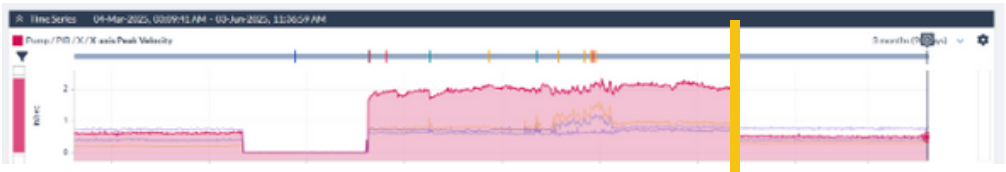
- AI/Human collaboration
- Avoided potential excess costs
- Machine learning pattern recognition

RESULTS

When turning one of the WFI pumps back on after a scheduled maintenance shutdown period, the AI tool flagged excessive velocity and notified the reliability engineering team. Engineering coordinated with maintenance to address the coupling issue causing the velocity spike and realigned the pump. Since the team caught and fixed the issue before the line returned to production, any unplanned shutdowns or batch losses were avoided.

CONCLUSION

Using AI tools in conjunction with the knowledge of experienced team members can protect valuable equipment from breaking and prevent production shutdowns or batch loss.



This image from the AI predictive maintenance tool dashboard displays the WFI pump's velocity before and after the intervention, which returned the machine to its baseline operation.

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