M100_May_Report

2026-06-12

Description

Motor-pump unit MP-204, located in the lubrication system of Compressor Train 2. The unit consists of a 22 kW induction motor directly coupled to a gear pump, operating at 2960 RPM under nominal conditions. It supplies lubricating oil to the main compressor bearings at a nominal pressure of 4.5 bar. The unit runs continuously and is considered critical for compressor protection.

Diagnostic

Vibration levels on the motor drive end (DE) bearing have exceeded the alert threshold over the past 72 hours, with RMS velocity reaching 6.2 mm/s (alert threshold: 5.5 mm/s). Spectral analysis shows an elevated 1× component along with sidebands around the gear mesh frequency, which may indicate early-stage gear wear or insufficient lubrication at the pump gear stage. A gradual upward trend has been observed over the last 3 weeks (+22% in overall RMS). No impacting or high-frequency content associated with advanced bearing damage has been detected. Oil pressure and temperature readings remain within normal limits.

Recommendation

Plan a maintenance inspection within the next 2–3 weeks. Recommended actions:

1. Check lubricating oil level and condition — take an oil sample for analysis if possible.
2. Inspect the motor-pump coupling for wear or misalignment.
3. Verify gear pump internal clearances during the next available maintenance window.
4. Review oil filter condition; a clogged filter could be contributing to marginal lubrication at the gear stage.
5. Increase capture frequency to every 4 hours to monitor trend evolution.

If vibration exceeds 9.0 mm/s or a sudden change in oil pressure is detected, escalate to urgent intervention.