CASE STUDIES – CS 7

Case studies in conditioning monitoring of pumps:

Pump type & details	Observations	Symptoms & information from spectra	Likely cause & solution
Single-stage end suction pumps (Pump 1500 lps@91m)	Bearings failing every 6 weeks. Rotor seen to shuttle axially. Flow tested.	Pump flow very low-operating near shutoff. Continual recirculation system has orifice marked 50mm diameter.	Orifice found to be only 25mm. Replaced with correct 75mm size and problem solved.

Pump type & details	Observations	Symptoms & information from spectra	Likely cause & solution
Two-stage pumps, constant speed 3000rpm	High vibration, increasing with output.	Spectra at full output showed high non-synchronous 6.5mm/s rms at 1.361x.1x was only 2mm/s	On dismantling, casing wear ring (PTFE) inserts were missing. On replacement vibration was only 1.8mm/s.