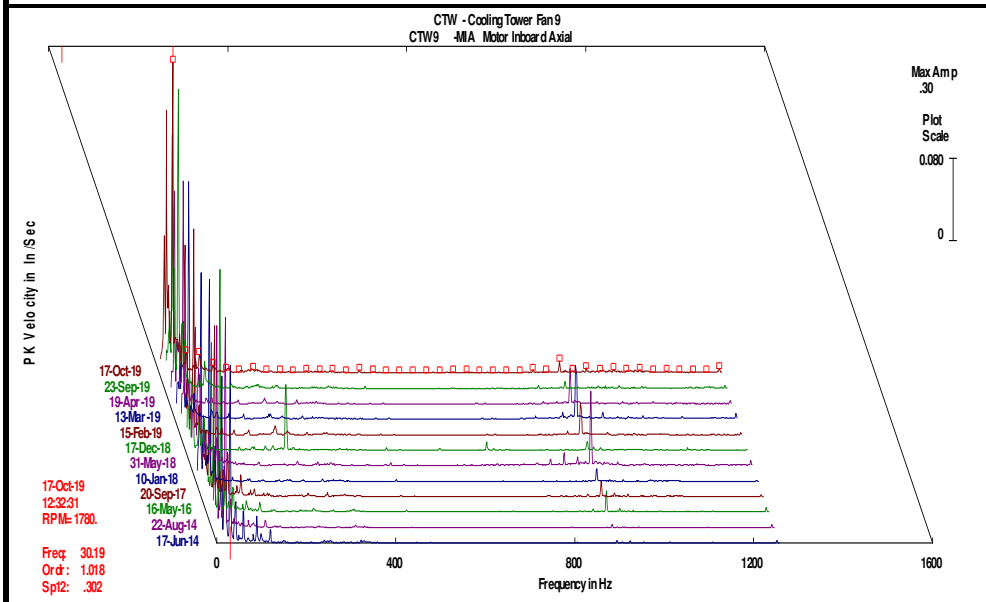
HI-SPEED PREDICTIVE MAINTENANCE

Machinery Vibration Report

Client	Dell Power Plant AECI	**Survey Date**	10-17-19
Location	Dell AR	**Report Date**	10-22-19
Machine	Cooling Tower 9 Motor Shown (and 7, 8, 10)	**QMS No.**	140953
Component	Unit	**Analyst**	DWS

Defect Rating for this machine	**CLASS II**
Defect Rating System	
Class I: Defect is present, but effect on reliability is not clear; no immediate action is required. Continue normal monitoring.	**Class III;** Defect (s) present that may cause failure in short term (less than 2 mos.). Should be addressed as soon as practical, with a high maintenance priority. Increase monitoring frequency.
Class II: Defect (s) present that may cause problem in long term (2-6 mos.). Repair during normal maintenance scheduling. Continue to monitor.	**Class IV;** Defect (s) present that makes continued reliability unpredictable, and possibility of secondary damage is high. ***Repairs should be made ASAP. An unscheduled shutdown should be considered for repairs.***

Vibration Data



Analysis

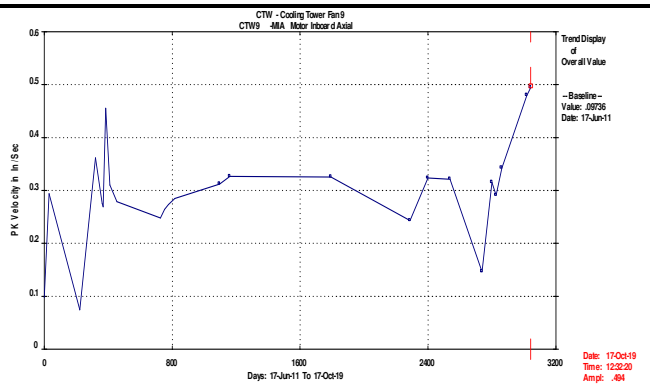
Unit has increase in drivetrain vibrations.

Discussion / Repair recommendations

The data shows the motor vibrations are up for most of these units in the axial measurement at near or above 0.45"/sec velocity peak overall. They have mostly increased after the tower rebuild. Inspect the units for defects associated with the fan and drive train. Inspect the structure and fasteners. Have the alignments checked and documented.

Rated a Class II Defect.

Trend Data



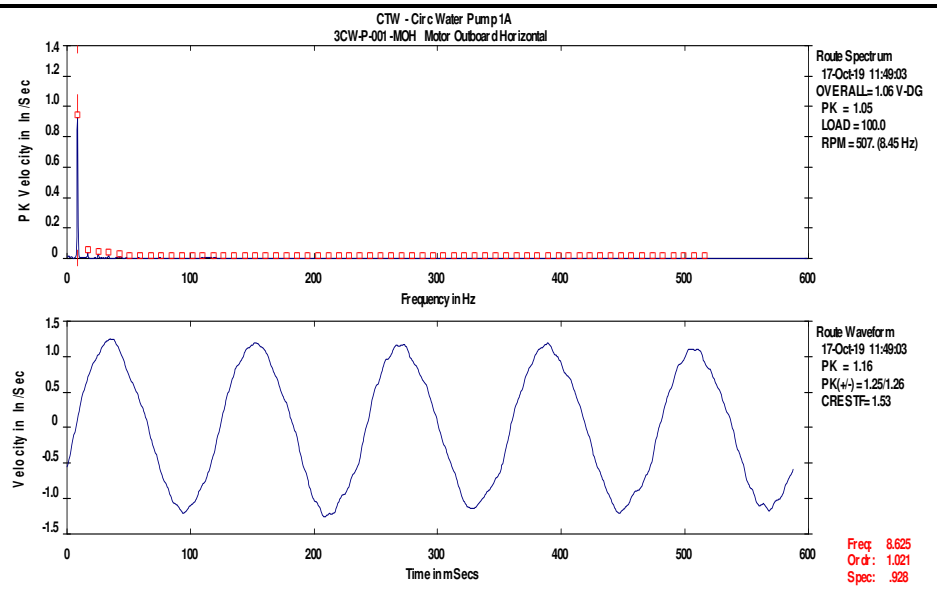
HI-SPEED PREDICTIVE MAINTENANCE

Machinery Vibration Report

Client	Dell Power Plant AECI	**Survey Date**	10-17-19
Location	Dell AR	**Report Date**	10-22-19
Machine	Circulating Pump 1	**QMS No.**	140953
Component		**Analyst**	DWS

Defect Rating for this machine	**CLASS IV**
Defect Rating System	
Class I: Defect is present, but effect on reliability is not clear; no immediate action is required. Continue normal monitoring.	**Class III;** Defect (s) present that may cause failure in short term (less than 2 mos.). Should be addressed as soon as practical, with a high maintenance priority. Increase monitoring frequency.
Class II: Defect (s) present that may cause problem in long term (2-6 mos.). Repair during normal maintenance scheduling. Continue to monitor.	**Class IV;** Defect (s) present that makes continued reliability unpredictable, and possibility of secondary damage is high. ***Repairs should be made ASAP. An unscheduled shutdown should be considered for repairs.***

Vibration Data



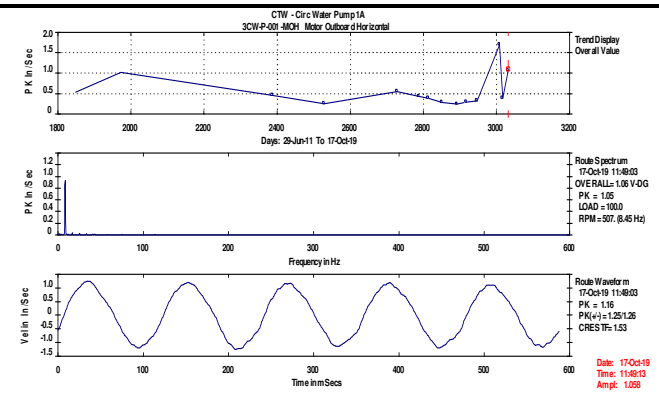
Analysis

Vibrations are above 1"/sec velocity peak as measured in the time waveform.

Discussion / Repair recommendations

The pump unit is back up to vibrating at higher levels at the unit fundamental speed. Vibrations are somewhat directional which is typical for vertical pumps generally due to stiffness from piping. We still suspect something has damaged the pump or is stuck in it. Vibrations at these amplitudes are damaging to the unit. Inspect the unit at the first opportunity. **Rated a Class IV Defect.**

Trend Data



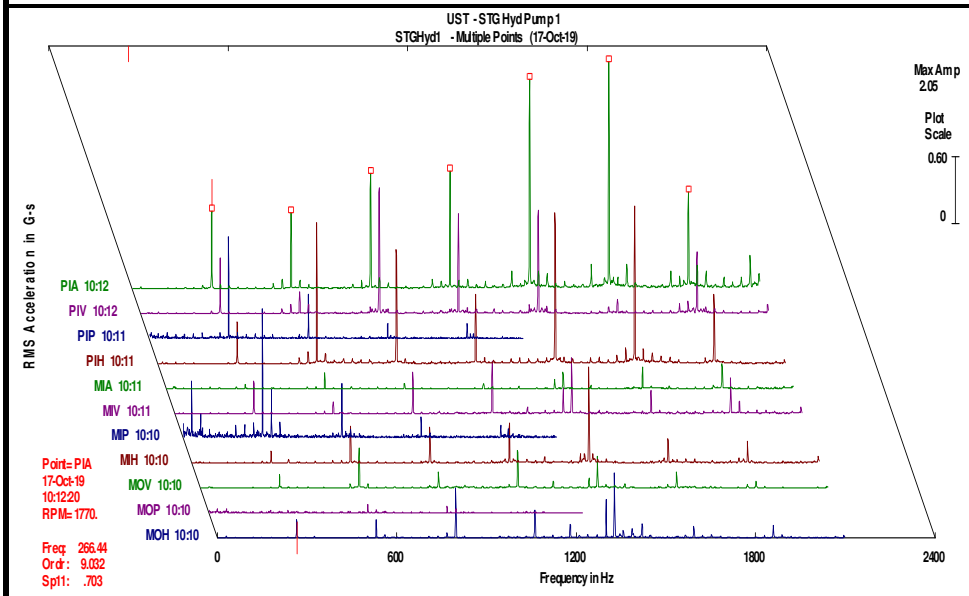
HI-SPEED PREDICTIVE MAINTENANCE

Machinery Vibration Report

Client	Dell Power Plant AECI	**Survey Date**	10-17-19
Location	Dell AR	**Report Date**	10-22-19
Machine	STG Hydraulic Pump 1 (Left unit)	**QMS No.**	140953
Component	Pump	**Analyst**	DWS

Defect Rating for this machine	**CLASS III**
Defect Rating System	
Class I: Defect is present, but effect on reliability is not clear; no immediate action is required. Continue normal monitoring.	**Class III;** Defect (s) present that may cause failure in short term (less than 2 mos.). Should be addressed as soon as practical, with a high maintenance priority. Increase monitoring frequency.
Class II: Defect (s) present that may cause problem in long term (2-6 mos.). Repair during normal maintenance scheduling. Continue to monitor.	**Class IV;** Defect (s) present that makes continued reliability unpredictable, and possibility of secondary damage is high. ***Repairs should be made ASAP. An unscheduled shutdown should be considered for repairs.***

Vibration Data



Analysis

Unit spectra show pump axial vibrations dominate the data and peaks are most likely pump pass and harmonics.

Discussion / Repair recommendations

Vibration data this month shows a large increase in pump passing harmonic vibrations. We could have caught the unit cycling; which will normally increase the amplitudes. We recommend inspecting the unit for issues with mechanical, flow parameters, controls and filters. **Rated a Class III Defect.**

Trend Data