7030 Ryburn Dr. Millington, TN Phone: (901) 873-5300 Fax: (901) 873-5301 www.gohispeed.com

April 30, 2025

Dell Power Plant
Dell, AR

The following report is a summary of findings from the vibration survey that was performed on April 15, 2025. The report only contains defects/issues found from the survey.

QualiTest® uses a four step rating system for defects.

Class I: Defect is present, but effect on reliability is not clear; no immediate action is required. Continue to normally monitor.

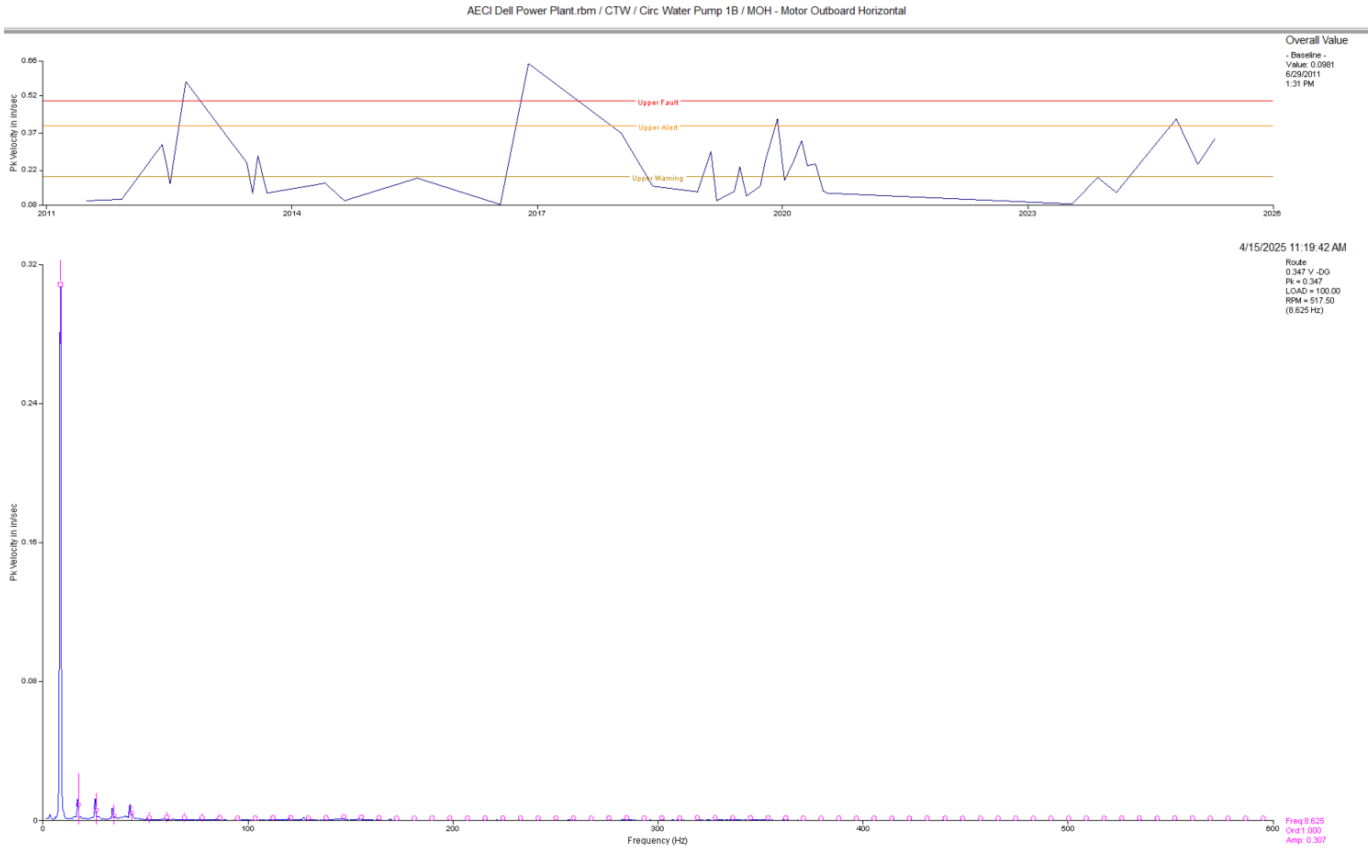
Class II: Defect (s) present that may cause problem in long term (2-6 months). Repair during normal maintenance scheduling. Continue to monitor.

Class III; Defect (s) present that may cause failure in short term (less than 2 months). This should be addressed as soon as practical, with a high maintenance priority. Increase monitoring frequency.

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

COOLING TOWER AREA

Circ Water Pump 1B CLASS I

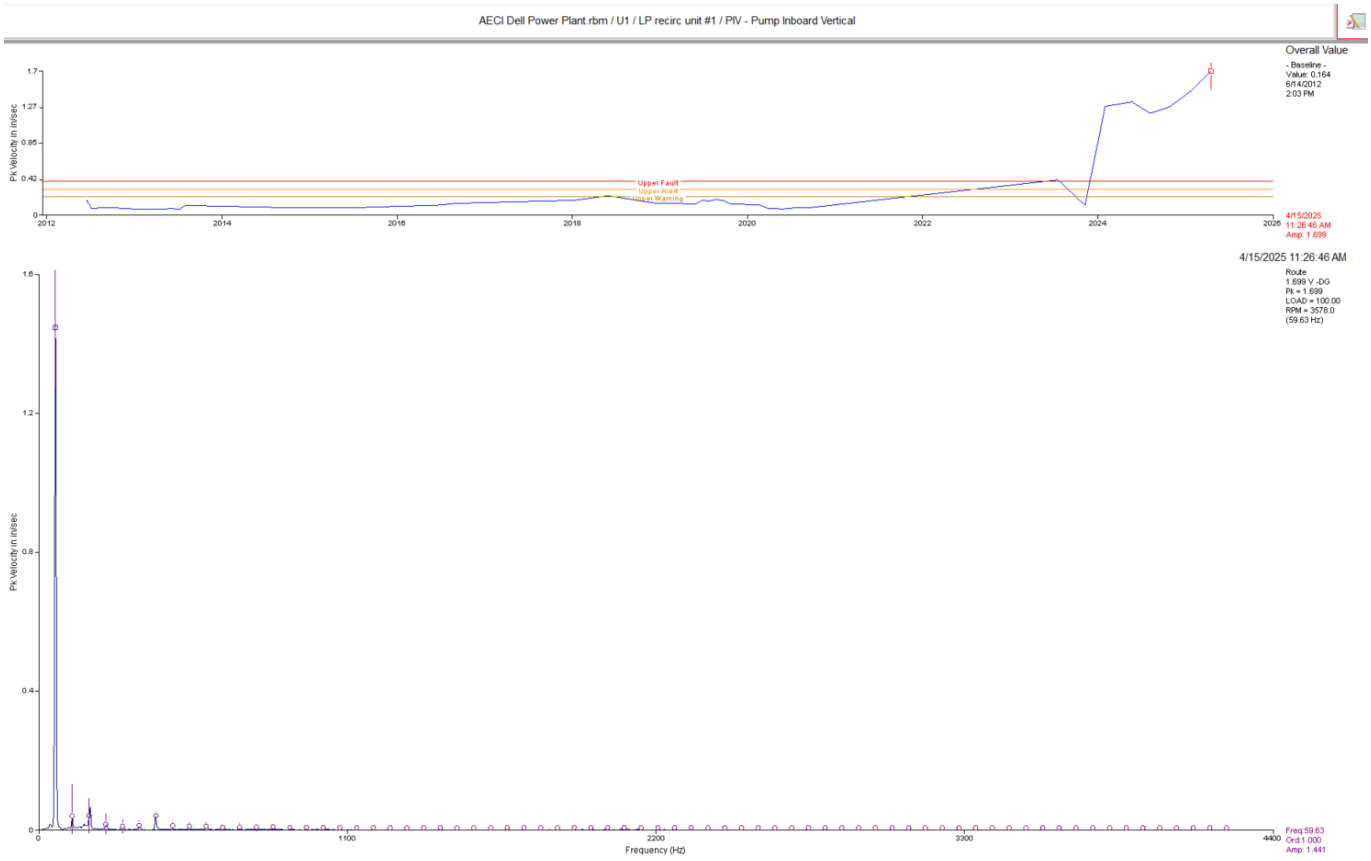


Observation: MOH velocity spectrum shows a dominant vibration at 8.6 Hz. which appears to be very close 1 x motor rpm. Trend data above shows a decrease in amplitude since last survey.

Recommendation:
Overall, the velocity amplitudes of the motor are slightly above average according to trend data. The 1 x motor rpm vibration seen in the MOH can possibly be influenced by the pump if the pump has internal issues such as shaft/bushing wear/excessive run-out, impeller imbalance. Pump flows and or resonance can also contribute somewhat. Ensure flows are good. We are monitoring this closely.

GAS TURBINE UNIT 1

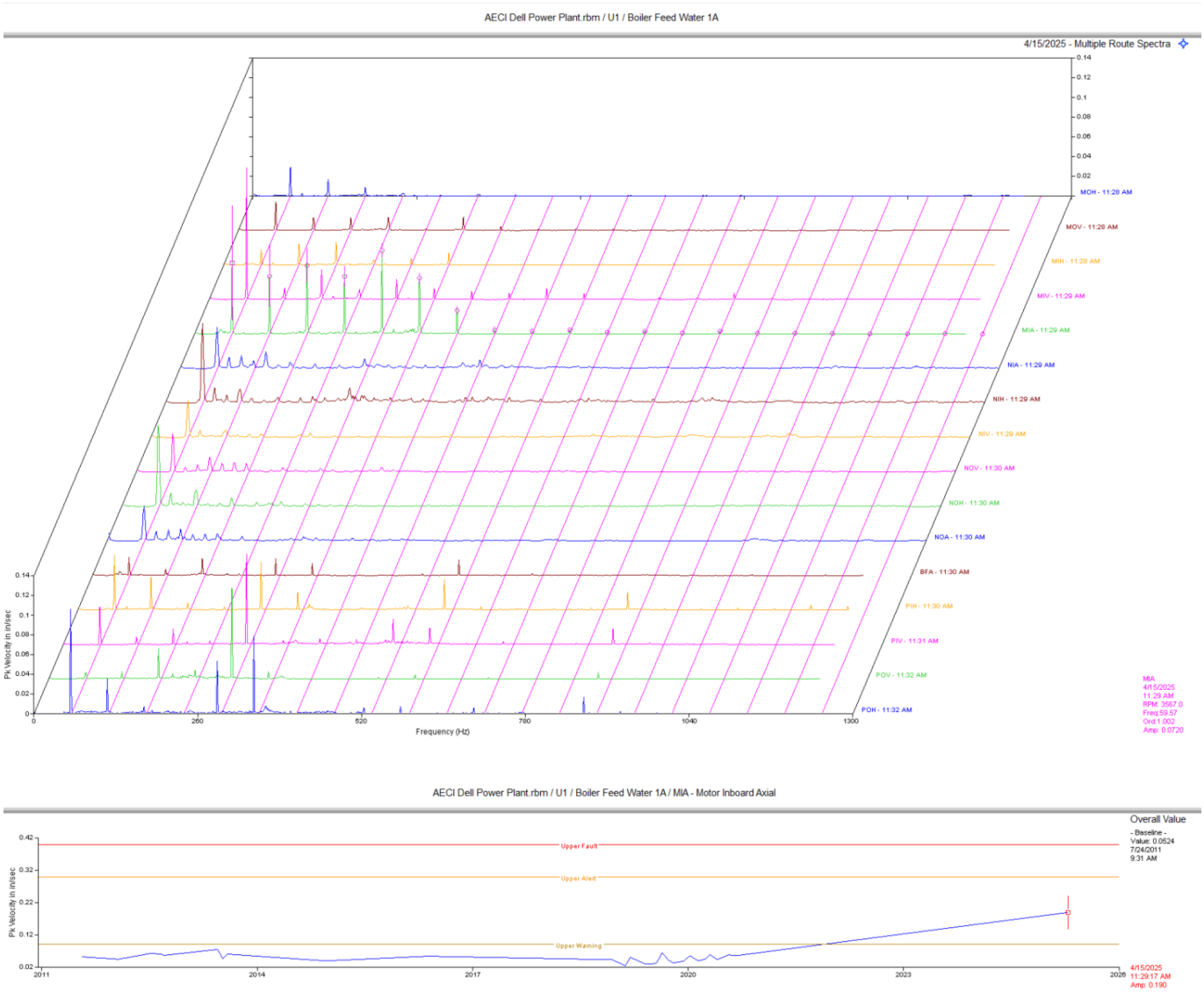
LP Recirc Unit 1 CLASS III



Observation:
Pump inboard vertical trend shows another increase in vibration this survey. PIV data shows a dominant 1 x rpm vibration.

Recommendation:
Data suggests a coupling issue, or issue with pump and or pump base. Check pump coupling for wear and check pump shaft for run out as time allows. Ensure pump base is not loose.

Unit 1 Boiler Feed Water Pump 1A CLASS I



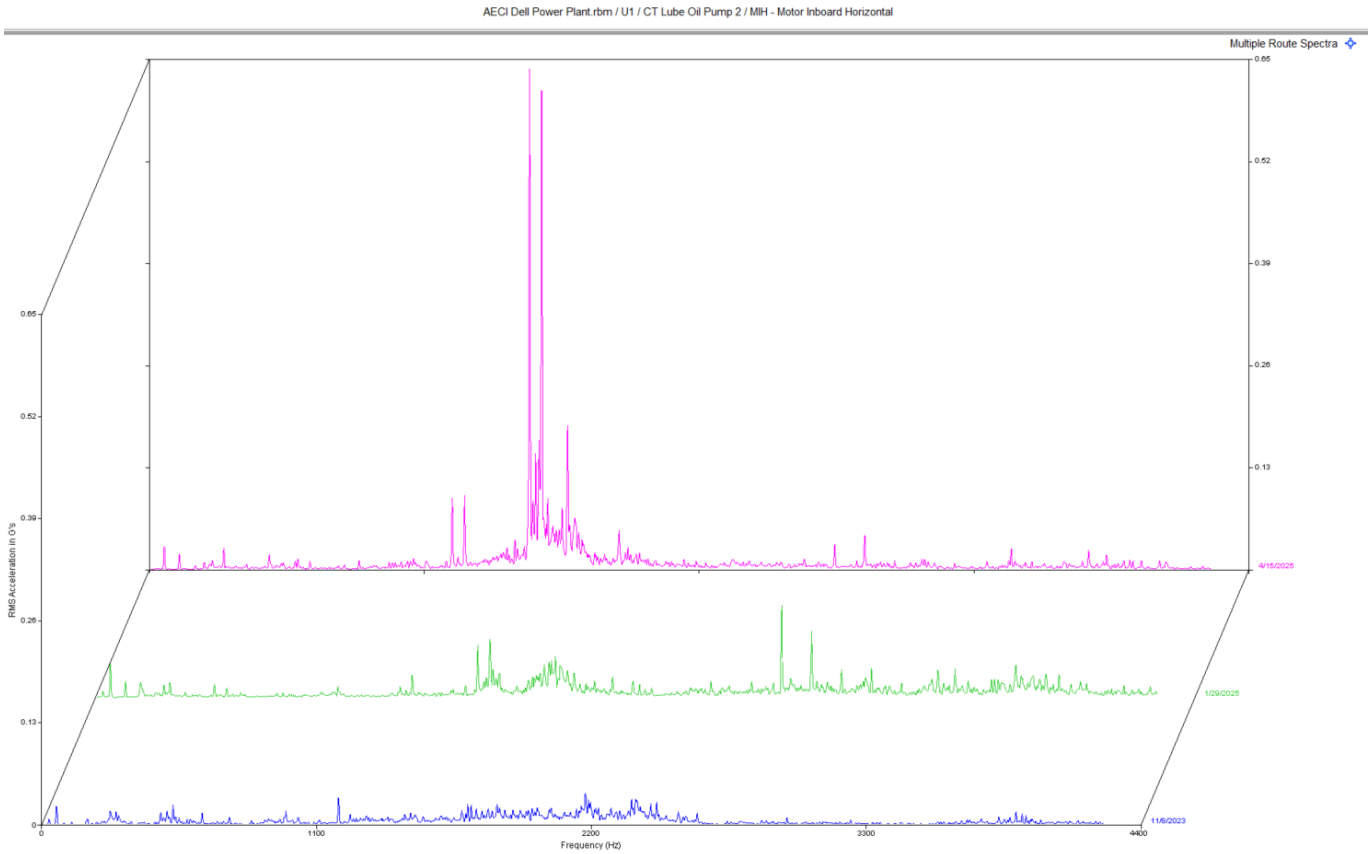
Observation:

Multi point waterfall spectra above shows several rpm harmonics in the motor data particularly in the DE of the motor. Vertical and axial directions are higher amplitudes.

Recommendation:

Data suggests excessive clearances in the motor bearings. Coupling issues could also be suspect. This motor has not had vibration readings since September 2020 so severity is unclear at this time. We recommend keeping a close eye on this motor. Increasing monitoring may be necessary.

CT Lube Oil Pump 2 CLASS II

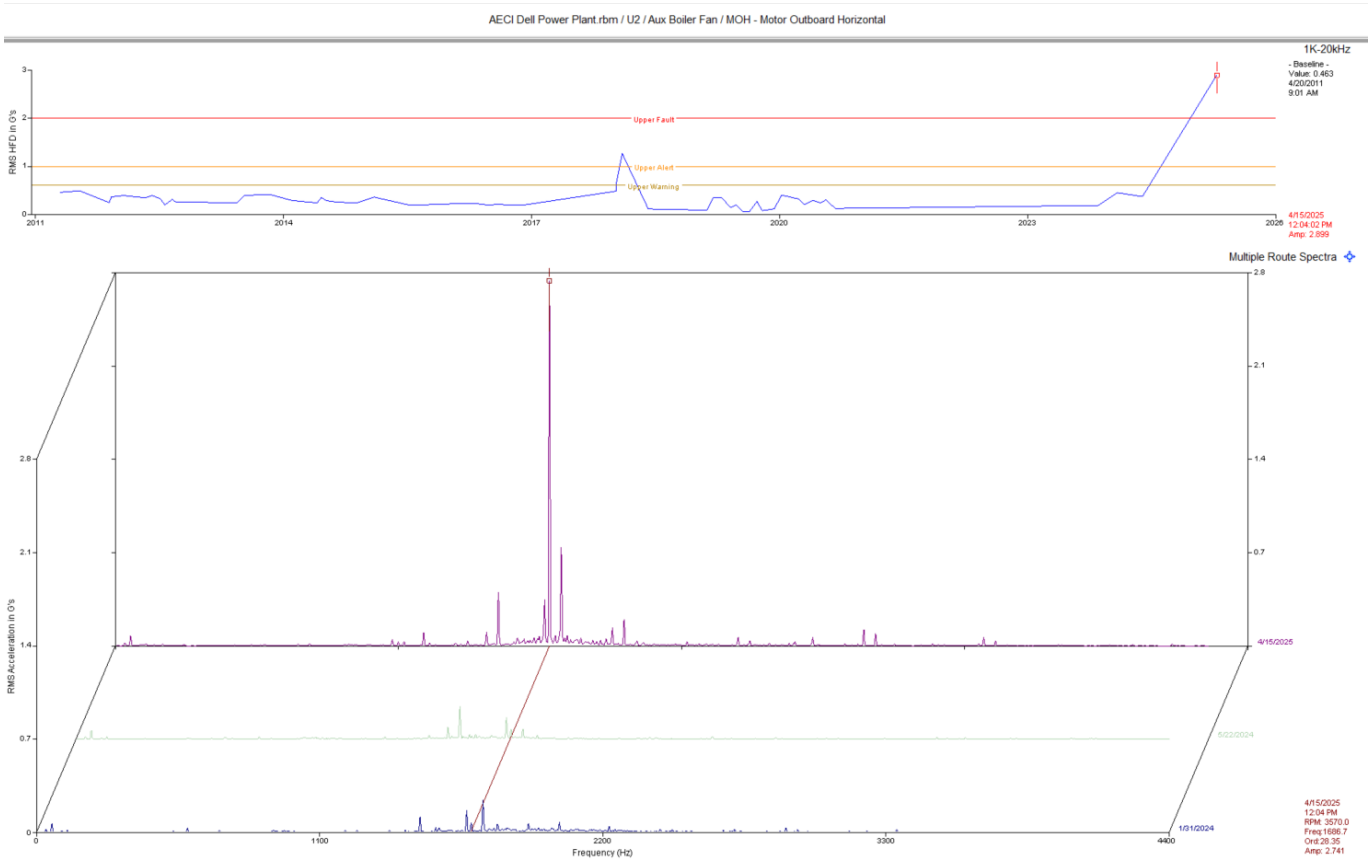


Observation:
Motor inboard horizontal (DE) waterfall spectra shows an increase in non-synchronous vibration. Spectral data shows a dominant non-synchronous vibration inn mid frequency range. Amplitudes are still on the low side as of now.

Recommendation:
Data suggests a bearing issue taking place in DE of motor. We will monitor this closely next survey. Inpsect motor as time allows.

GAS TURBINE UNIT 1

Aux Boiler Fan CLASS II



Observation:

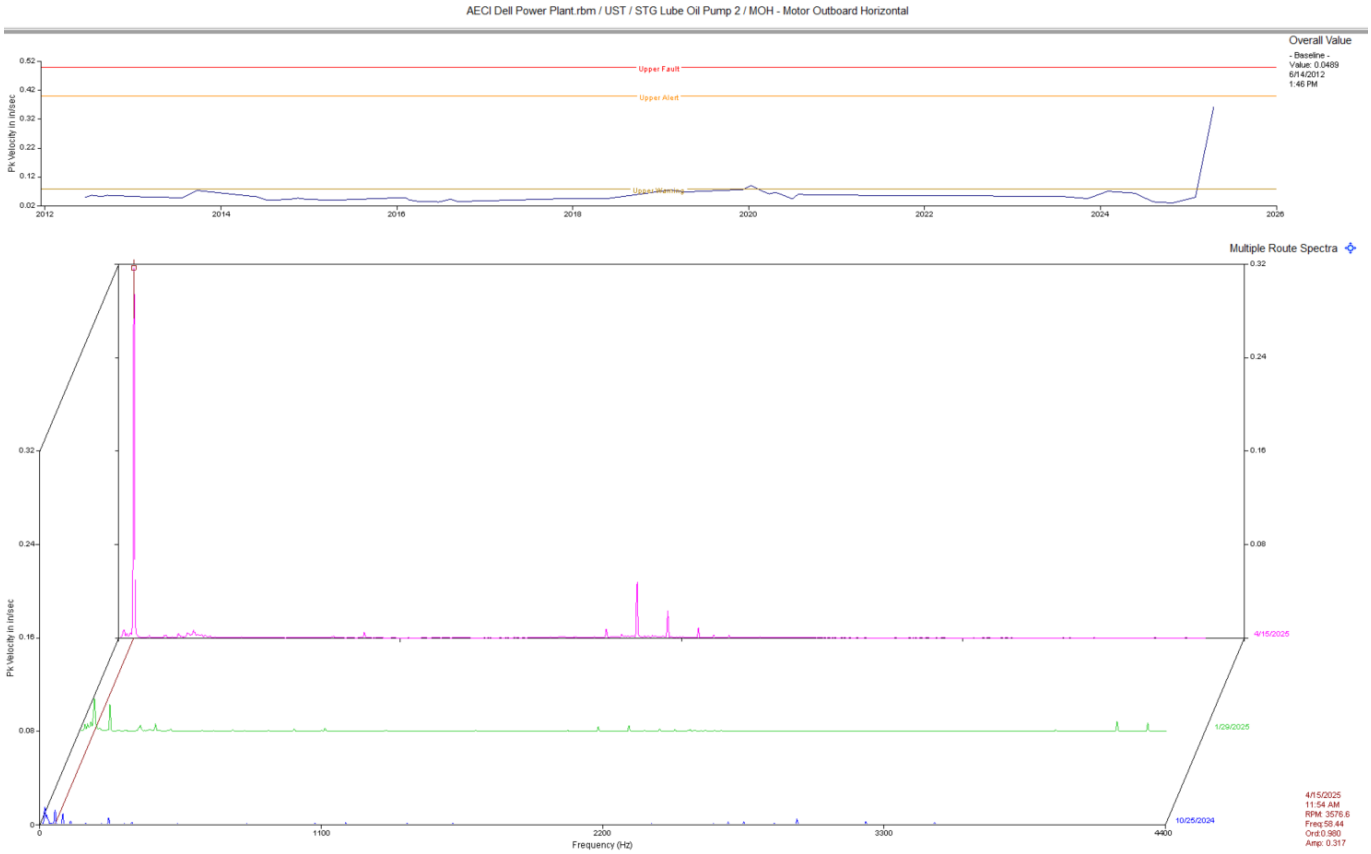
Motor outboard horizontal shows an increase in acceleration amplitude. Spectral data shows a dominant peak that appears to be non-synchronous to motor rpm.

Recommendation:

Data suggests a bearing issue in the motor. It has been around one year since our last data collection, so severity is uncertain. For now, inspect motor as best as possible.

STEAM TURBINE UNIT

STG Lube Oil Pump 2 CLASS II



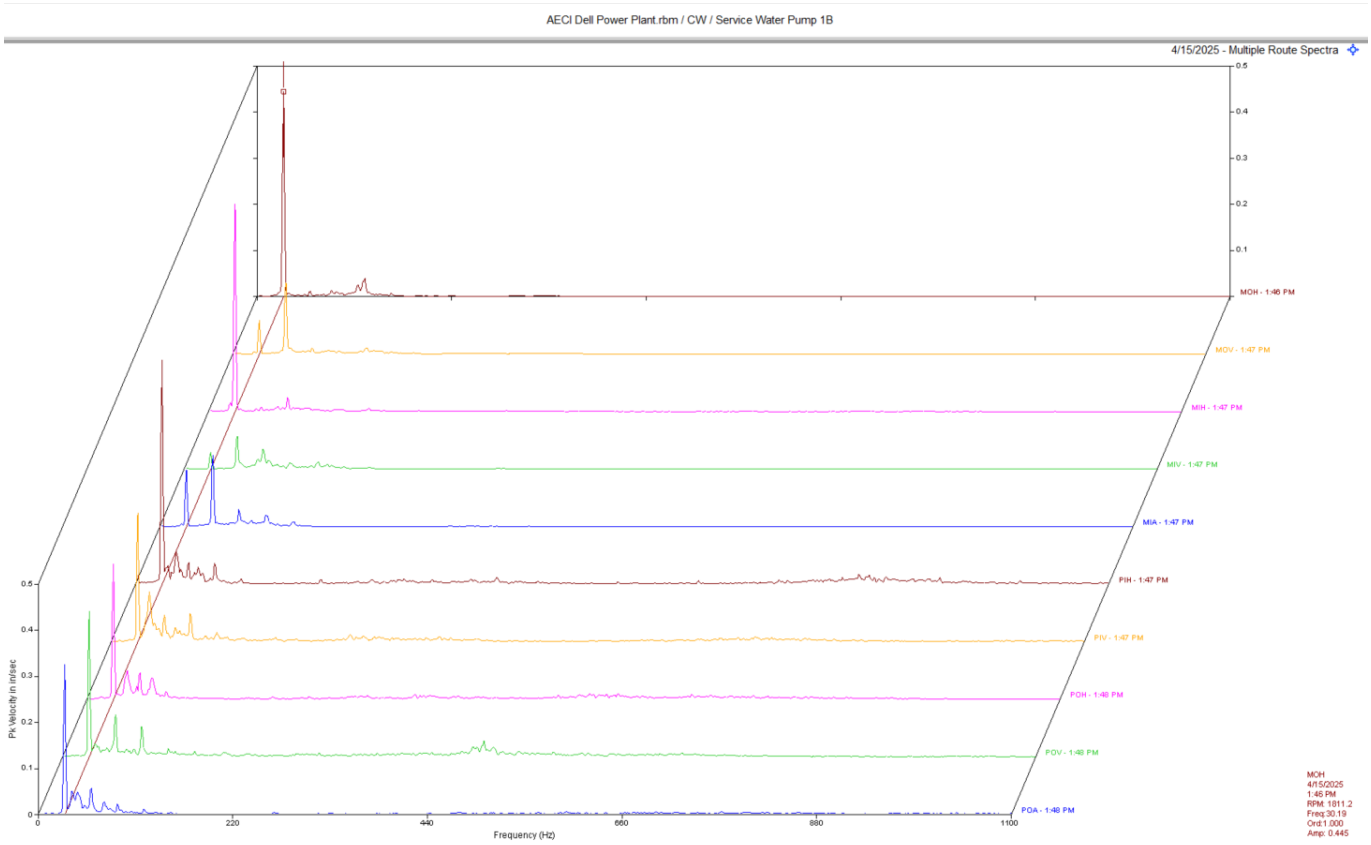
Observation:

Motor outboard horizontal waterfall spectra shows an increase in 1 x rpm and also an increase in what appears to be possible rotor bar pass frequency. We would need the number of rotor bars to confirm this. There are also some 2 x line frequency sidebands around this peak. Trend data of MOH shows increased overall amplitude as well.

Recommendation:

Vibration data indicates a possible issue with the rotor such as rotor bar issues, rotor eccentricity, air gap variation. The increased 1 x rpm vibration is also another indication of possible rotor bar issues. We will monitor this issue closely in the coming surveys.

Service Water Pump 1B CLASS II



Observation:

Multi-point spectra of the motor and pump show dominant 1 x rpm vibration in motor with some 1 x rpm in pump.

Recommendation:

Data suggests possible coupling and/or alignment issue. Check drivetrain for these issues.

Abbreviated Last Measurement Summary

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Database: AECI Dell Power Plant.rbm
Area: Cooling Tower

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
CTW1 - Cooling Tower Fan 1 HS	(15-Apr-25)	
	OVERALL LEVEL	1K-20kHz
MOH	.093 In/Sec	.173 G-s
MOP	.095 G-s	
MOV	.119 In/Sec	.084 G-s
MIH	.087 In/Sec	.386 G-s
MIP	.291 G-s	
MIV	.117 In/Sec	.205 G-s
MIA	.094 In/Sec	.160 G-s
CTW2 - Cooling Tower Fan 2 HS	(15-Apr-25)	
	OVERALL LEVEL	1K-20kHz
MOH	.100 In/Sec	.235 G-s
MOP	.113 G-s	
MOV	.110 In/Sec	.184 G-s
MIH	.117 In/Sec	.584 G-s
MIP	.320 G-s	
MIV	.121 In/Sec	.275 G-s
MIA	.160 In/Sec	.242 G-s
CTW3 - Cooling Tower Fan 3 HS	(15-Apr-25)	
	OVERALL LEVEL	1K-20kHz
MOH	.148 In/Sec	.681 G-s
MOP	.167 G-s	
MOV	.235 In/Sec	.413 G-s
MIH	.145 In/Sec	.624 G-s
MIP	.199 G-s	
MIV	.272 In/Sec	.428 G-s
MIA	.311 In/Sec	.218 G-s
CTW4 - Cooling Tower Fan 4 HS	(15-Apr-25)	
	OVERALL LEVEL	1K-20kHz
MOH	.086 In/Sec	.167 G-s
MOP	.048 G-s	
MOV	.104 In/Sec	.071 G-s
MIH	.066 In/Sec	.234 G-s
MIP	.104 G-s	
MIV	.114 In/Sec	.070 G-s
MIA	.107 In/Sec	.061 G-s
CTW5 - Cooling Tower Fan 5 HS	(15-Apr-25)	
	OVERALL LEVEL	1K-20kHz
MOH	.136 In/Sec	.196 G-s
MOP	.093 G-s	
MOV	.096 In/Sec	.132 G-s
MIH	.106 In/Sec	.957 G-s
MIP	.416 G-s	
MIV	.090 In/Sec	.242 G-s
MIA	.132 In/Sec	.279 G-s
CTW6 - Cooling Tower Fan 6 HS	(15-Apr-25)	
	OVERALL LEVEL	1K-20kHz
MOH	.139 In/Sec	.185 G-s
MOP	.028 G-s	
MOV	.121 In/Sec	.073 G-s
MIH	.113 In/Sec	.595 G-s
MIP	.313 G-s	
MIV	.099 In/Sec	.091 G-s
MIA	.133 In/Sec	.151 G-s

CTW8 - Cooling Tower Fan 8 HS (15-Apr-25)

	OVERALL LEVEL	1K-20kHz
MOH	.073 In/Sec	.269 G-s
MOP	.148 G-s	
MOV	.099 In/Sec	.126 G-s
MIH	.075 In/Sec	.686 G-s
MIP	.379 G-s	
MIV	.225 In/Sec	.143 G-s
MIA	.091 In/Sec	.251 G-s

CTW9 - Cooling Tower Fan 9 HS (15-Apr-25)

	OVERALL LEVEL	1K-20kHz
MOH	.105 In/Sec	.310 G-s
MOP	.161 G-s	
MOV	.116 In/Sec	.108 G-s
MIH	.098 In/Sec	.205 G-s
MIP	.120 G-s	
MIV	.111 In/Sec	.108 G-s
MIA	.106 In/Sec	.090 G-s

CTW10 - Cooling Tower Fan 10 HS (15-Apr-25)

	OVERALL LEVEL	1K-20kHz
MOH	.102 In/Sec	.295 G-s
MOP	.148 G-s	
MOV	.095 In/Sec	.098 G-s
MIH	.077 In/Sec	.293 G-s
MIP	.178 G-s	
MIV	.086 In/Sec	.138 G-s
MIA	.082 In/Sec	.223 G-s

CTW11 - Cooling Tower Fan 11 HS (15-Apr-25)

	OVERALL LEVEL	1K-20kHz
MOH	.078 In/Sec	.280 G-s
MOP	.169 G-s	
MOV	.073 In/Sec	.087 G-s
MIH	.074 In/Sec	.399 G-s
MIP	.265 G-s	
MIV	.081 In/Sec	.154 G-s
MIA	.096 In/Sec	.189 G-s

CTW12 - Cooling Tower Fan 12 HS (15-Apr-25)

	OVERALL LEVEL	1K-20kHz
MOH	.103 In/Sec	.243 G-s
MOP	.102 G-s	
MOV	.088 In/Sec	.091 G-s
MIH	.088 In/Sec	.293 G-s
MIP	.128 G-s	
MIV	.086 In/Sec	.095 G-s
MIA	.076 In/Sec	.242 G-s

CTW1 LS - Cooling Tower Fan 1 LS (22-May-24)

	OVERALL LEVEL	1K-20kHz
MOH	.137 In/Sec	.442 G-s
MOP	.200 G-s	
MOV	.115 In/Sec	.107 G-s
MIH	.103 In/Sec	.0024 G-s
MIV	.091 In/Sec	.0033 G-s
MIA	.037 In/Sec	.0045 G-s

CTW2 LS - Cooling Tower Fan 2 LS (22-May-24)

	OVERALL LEVEL	1K-20kHz
MOH	.111 In/Sec	.219 G-s
MOP	.120 G-s	
MOV	.102 In/Sec	.137 G-s
MIH	.123 In/Sec	1.364 G-s
MIP	.674 G-s	
MIV	.105 In/Sec	.210 G-s
MIA	.121 In/Sec	.165 G-s

CTW3 LS - Cooling Tower Fan 3 LS (22-May-24)

	OVERALL LEVEL	1K-20kHz
MOH	.104 In/Sec	.138 G-s
MOP	.056 G-s	
MOV	.096 In/Sec	.064 G-s
MIH	.122 In/Sec	.998 G-s
MIP	.505 G-s	
MIV	.111 In/Sec	.072 G-s
MIA	.114 In/Sec	.237 G-s

CTW4 LS - Cooling Tower Fan 4 LS (22-May-24)

	OVERALL LEVEL	1K-20kHz
MOH	.148 In/Sec	.110 G-s
MOP	.049 G-s	
MOV	.105 In/Sec	.048 G-s
MIH	.144 In/Sec	.208 G-s
MIP	.114 G-s	
MIV	.104 In/Sec	.051 G-s
MIA	.093 In/Sec	.048 G-s

CTW5 LS - Cooling Tower Fan 5 LS (22-May-24)

	OVERALL LEVEL	1K-20kHz
MOH	.138 In/Sec	.310 G-s
MOP	.138 G-s	
MOV	.157 In/Sec	.073 G-s
MIH	.173 In/Sec	.318 G-s
MIP	.383 G-s	
MIV	.162 In/Sec	.120 G-s
MIA	.094 In/Sec	.176 G-s

CTW6 LS - Cooling Tower Fan 6 LS (22-May-24)

	OVERALL LEVEL	1K-20kHz
MOH	.115 In/Sec	.225 G-s
MOP	.105 G-s	
MOV	.100 In/Sec	.077 G-s
MIH	.109 In/Sec	.321 G-s
MIP	.087 G-s	
MIV	.105 In/Sec	.072 G-s
MIA	.094 In/Sec	.148 G-s

3CW-P-001 - Circ Water Pump 1A (15-Apr-25)

	OVERALL LEVEL	1K-20kHz
MOH	.105 In/Sec	.114 G-s
MOP	.067 G-s	
MOV	.133 In/Sec	.086 G-s
MIH	.050 In/Sec	.122 G-s
MIP	.064 G-s	
MIV	.032 In/Sec	.158 G-s
MIA	.036 In/Sec	.276 G-s

3CW-P-002 - Circ Water Pump 1B (15-Apr-25)

	OVERALL LEVEL	1K-20kHz
MOH	.347 In/Sec	.309 G-s
MOP	.148 G-s	
MOV	.229 In/Sec	.105 G-s
MIH	.262 In/Sec	.155 G-s
MIP	.064 G-s	
MIV	.081 In/Sec	.200 G-s
MIA	.044 In/Sec	.185 G-s

LFAA2 - LFAA 1B (15-Apr-25)

	OVERALL LEVEL	1K-20kHz
MOH	.053 In/Sec	.715 G-s
MOP	.482 G-s	
MOV	.044 In/Sec	.790 G-s
MIH	.056 In/Sec	.881 G-s
MIP	.607 G-s	
MIV	.058 In/Sec	.592 G-s
MIA	.040 In/Sec	.798 G-s

		OVERALL LEVEL	1K-20KHz
	PIH	.012 In/Sec	.140 G-s
	PIP	.079 G-s	
	PIV	.012 In/Sec	.215 G-s
	PIA	.016 In/Sec	.740 G-s

Area: UNIT 1

MEASUREMENT POINT		OVERALL LEVEL	HFD / VHFD
LP #1	- LP recirc unit #1	(15-Apr-25)	
		OVERALL LEVEL	1K-20kHz
	MOH	.104 In/Sec	.549 G-s
	MOP	.127 G-s	
	MOV	.231 In/Sec	.245 G-s
	MIH	.072 In/Sec	.907 G-s
	MIP	.456 G-s	
	MIV	.270 In/Sec	.544 G-s
	MIA	.422 In/Sec	.457 G-s
		OVERALL LEVEL	1K-20KHz
	PIH	.897 In/Sec	.573 G-s
	PIP	.365 G-s	
	PIV	1.699 In/Sec	.315 G-s
	POH	.257 In/Sec	.465 G-s
	POP	.274 G-s	
	POV	.720 In/Sec	.374 G-s
	POA	1.014 In/Sec	.746 G-s
1FD-P-001A	- Boiler Feed Water 1A	(15-Apr-25)	
		OVERALL LEVEL	1K-20KHz
	MOH	.040 In/Sec	.181 G-s
	MOP	.134 G-s	
	MOV	.048 In/Sec	.260 G-s
	MIH	.046 In/Sec	.160 G-s
	MIP	.094 G-s	
	MIV	.148 In/Sec	.446 G-s
	MIA	.190 In/Sec	.562 G-s
		OVERALL LEVEL	1K-20kHz
	NIA	.068 In/Sec	.415 G-s
	NIH	.111 In/Sec	.406 G-s
	NIV	.055 In/Sec	.450 G-s
	NOV	.057 In/Sec	.330 G-s
	NOH	.106 In/Sec	.274 G-s
	NOA	.056 In/Sec	.226 G-s
		OVERALL LEVEL	1K-20KHz
	BFA	.042 In/Sec	.130 G-s
	PIH	.097 In/Sec	.273 G-s
	PIV	.114 In/Sec	.200 G-s
	POV	.103 In/Sec	.115 G-s
	POH	.154 In/Sec	.089 G-s
CT2	- CT Lube Oil Pump 2	(15-Apr-25)	
		OVERALL LEVEL	1K-20kHz
	MOH	.076 In/Sec	.421 G-s
	MOP	.077 G-s	
	MOV	.079 In/Sec	.451 G-s
	MIH	.082 In/Sec	.892 G-s
	MIP	.085 G-s	
	MIV	.061 In/Sec	.303 G-s
	MIA	.048 In/Sec	.339 G-s
CTHYD !1	- CT Hyd Pump 2	(15-Apr-25)	
		OVERALL LEVEL	1K-20kHz
	MOH	.063 In/Sec	.370 G-s
	MOP	.140 G-s	
	MOV	.274 In/Sec	.433 G-s
	MIH	.049 In/Sec	.883 G-s
	MIP	.449 G-s	

	MIV	.060 In/Sec	.448 G-s
	MIA	.046 In/Sec	.501 G-s

Area: UNIT 2

MEASUREMENT POINT		OVERALL LEVEL	HFD / VHFD
LP #2	- LP recirc unit #2	(15-Apr-25)	
		OVERALL LEVEL	1K-20kHz
	MOH	.117 In/Sec	.639 G-s
	MOP	.110 G-s	
	MOV	.065 In/Sec	.771 G-s
	MIH	.120 In/Sec	1.207 G-s
	MIP	.547 G-s	
	MIV	.078 In/Sec	1.109 G-s
	MIA	.179 In/Sec	.818 G-s
		OVERALL LEVEL	1K-20KHz
	PIH	.156 In/Sec	1.118 G-s
	PIP	.700 G-s	
	PIV	.123 In/Sec	.895 G-s
	POH	.112 In/Sec	1.095 G-s
	POP	.633 G-s	
	POV	.141 In/Sec	1.217 G-s
	POA	.129 In/Sec	1.327 G-s
2FD-P-002B	- Boiler Feed Water 2B	(15-Apr-25)	
		OVERALL LEVEL	1K-20KHz
	MOH	.023 In/Sec	.258 G-s
	MOP	.165 G-s	
	MOV	.067 In/Sec	.304 G-s
	MIH	.055 In/Sec	.252 G-s
	MIP	.148 G-s	
	MIV	.038 In/Sec	.569 G-s
	MIA	.035 In/Sec	.775 G-s
		OVERALL LEVEL	1K-20kHz
	NIA	.068 In/Sec	.264 G-s
	NIH	.051 In/Sec	.414 G-s
	NIV	.041 In/Sec	.276 G-s
	NOV	.028 In/Sec	.113 G-s
	NOH	.028 In/Sec	.180 G-s
	NOA	.057 In/Sec	.245 G-s
		OVERALL LEVEL	1K-20KHz
	BFA	.020 In/Sec	.111 G-s
	PIH	.039 In/Sec	.126 G-s
	PIV	.055 In/Sec	.157 G-s
	POV	.072 In/Sec	.096 G-s
	POH	.053 In/Sec	.099 G-s
CT1	- CT Lube Oil Pump 1	(15-Apr-25)	
		OVERALL LEVEL	1K-20kHz
	MOH	.065 In/Sec	.524 G-s
	MOP	.172 G-s	
	MOV	.043 In/Sec	.097 G-s
	MIH	.071 In/Sec	.148 G-s
	MIP	.049 G-s	
	MIV	.057 In/Sec	.307 G-s
	MIA	.153 In/Sec	.625 G-s
CTHYD !	- CT Hyd Pump 1	(15-Apr-25)	
		OVERALL LEVEL	1K-20kHz
	MOH	.087 In/Sec	.940 G-s
	MOP	.396 G-s	
	MOV	.096 In/Sec	1.117 G-s
	MIH	.069 In/Sec	.799 G-s
	MIP	.382 G-s	
	MIV	.082 In/Sec	1.741 G-s
	MIA	.067 In/Sec	.820 G-s

ABF - Aux Boiler Fan (15-Apr-25)

	OVERALL LEVEL	1K-20kHz
MOH	.212 In/Sec	2.899 G-s
MOP	.145 G-s	
MOV	.257 In/Sec	2.139 G-s
MIH	.061 In/Sec	.716 G-s
MIP	.414 G-s	
MIV	.067 In/Sec	.761 G-s
MIA	.110 In/Sec	.199 G-s

Area: UNIT STEAM TURBINE

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD

3CW-P-004 - CCW Booster Pump 2 (15-Apr-25)

	OVERALL LEVEL	1K-20kHz
MOH	.085 In/Sec	.277 G-s
MOP	.072 G-s	
MOV	.055 In/Sec	.358 G-s
MIH	.051 In/Sec	.241 G-s
MIP	.143 G-s	
MIV	.061 In/Sec	.203 G-s
MIA	.088 In/Sec	.204 G-s
	OVERALL LEVEL	1K-20KHz
PIH	.081 In/Sec	.286 G-s
PIP	.150 G-s	
PIV	.051 In/Sec	.344 G-s
PIA	.118 In/Sec	.484 G-s

0CC-P-001 - CLosed Cooling Water 1 (15-Apr-25)

	OVERALL LEVEL	1K-20kHz
MOH	.062 In/Sec	.393 G-s
MOP	.141 G-s	
MOV	.061 In/Sec	.906 G-s
MIH	.059 In/Sec	.674 G-s
MIP	.300 G-s	
MIV	.058 In/Sec	.738 G-s
MIA	.039 In/Sec	.633 G-s
	OVERALL LEVEL	1K-20KHz
PIH	.041 In/Sec	.629 G-s
PIP	.318 G-s	
PIV	.048 In/Sec	.431 G-s
POH	.095 In/Sec	.765 G-s
POP	.182 G-s	
POV	.058 In/Sec	.945 G-s
POA	.067 In/Sec	.897 G-s

3CH-P-001A - Condensate Pump A (15-Apr-25)

	OVERALL LEVEL	1K-20kHz
MOH	.154 In/Sec	.370 G-s
MOP	.107 G-s	
MOV	.139 In/Sec	.516 G-s
MIH	.090 In/Sec	.215 G-s
MIP	.090 G-s	
MIV	.057 In/Sec	.339 G-s
MIA	.028 In/Sec	.322 G-s

3CH-P-001 - Condensate Pump B (15-Apr-25)

	OVERALL LEVEL	1K-20kHz
MOH	.041 In/Sec	.526 G-s
MOP	.130 G-s	
MOV	.039 In/Sec	.337 G-s
MIH	.035 In/Sec	.445 G-s
MIP	.114 G-s	
MIV	.031 In/Sec	.454 G-s
MIA	.047 In/Sec	.588 G-s

3AE-P-001 - Vacuum Pump 1 (15-Apr-25)

	OVERALL LEVEL	1K-20kHz
MOH	.134 In/Sec	.456 G-s
MOP	.114 G-s	
MOV	.118 In/Sec	.659 G-s
MIH	.097 In/Sec	.678 G-s
MIP	.140 G-s	
MIV	.127 In/Sec	.348 G-s
MIA	.124 In/Sec	.394 G-s
	OVERALL LEVEL	1K-20KHz
PIH	.105 In/Sec	.436 G-s
PIP	.348 G-s	
PIV	.208 In/Sec	.455 G-s
POH	.086 In/Sec	.322 G-s
POP	.212 G-s	
POV	.146 In/Sec	.248 G-s
POA	.085 In/Sec	.394 G-s

STG2 - STG Lube Oil Pump 2 (15-Apr-25)

	OVERALL LEVEL	1K-20kHz
MOH	.364 In/Sec	1.367 G-s
MOP	.102 G-s	
MOV	.231 In/Sec	.454 G-s
MIH	.179 In/Sec	.309 G-s
MIP	.154 G-s	
MIV	.096 In/Sec	.543 G-s
MIA	.048 In/Sec	.533 G-s

Area: WATER PUMPS AND VACUUM PUMPS

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD

OSW-P-001B - Service Water Pump 1B (15-Apr-25)

	OVERALL LEVEL	1K-20kHz
MOH	.465 In/Sec	.123 G-s
MOP	.033 G-s	
MOV	.197 In/Sec	.302 G-s
MIH	.468 In/Sec	.128 G-s
MIP	.032 G-s	
MIV	.128 In/Sec	.288 G-s
MIA	.229 In/Sec	.310 G-s
	OVERALL LEVEL	1K-20KHz
PIH	.544 In/Sec	1.266 G-s
PIP	.828 G-s	
PIV	.372 In/Sec	1.203 G-s
POH	.352 In/Sec	.738 G-s
POP	.430 G-s	
POV	.384 In/Sec	1.114 G-s
POA	.372 In/Sec	1.065 G-s

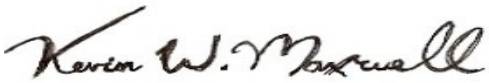
Clarification Of Vibration Units:

Acc --> G-s RMS

Vel --> In/Sec PK

As always, it has been a pleasure to serve AECI Dell Power Plant. If there are any comments or questions, do not hesitate to contact us.

Sincerely,



Senior Reliability Specialist

Cell: 901-486-4565
Email: kwilliam@gohispeed.com