HI-SPEED INDUSTRIAL SERVICE

QualiTest® Diagnostics

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April 15, 2025

North Shelby Plant
Millington, TN

The following is a summary of findings from the April 2025 monthly vibration survey at the North Shelby site.

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.

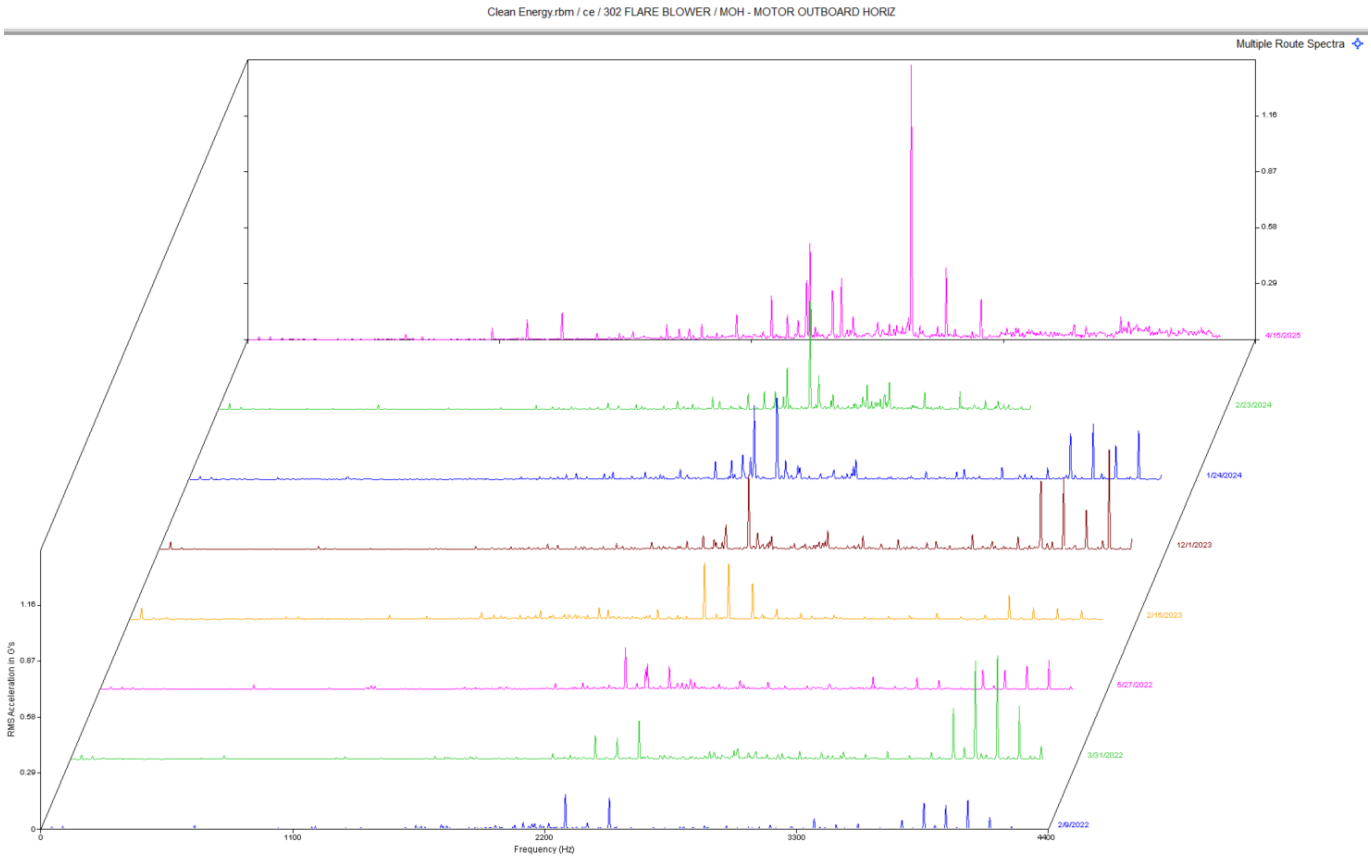
Class II: Defect (s) present that may cause problem in long term (2-6 months). Repair during normal maintenance scheduling. Continue to monitor.

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

Defects

302 Flare Blower CLASS I



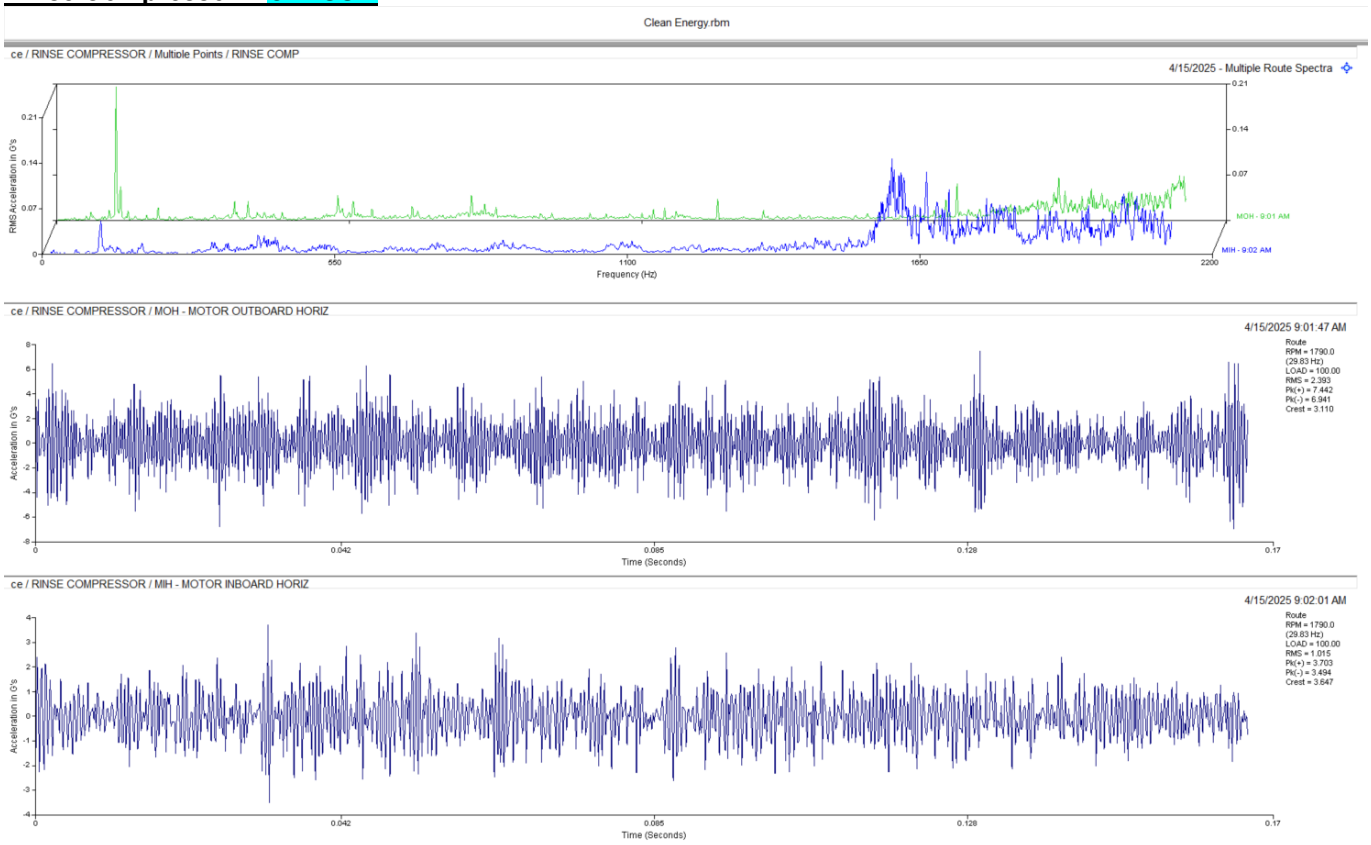
Observations:

Data above is the waterfall spectra of the motor outboard horizontal. There appears an increase in non-synchronous activity present in the spectra.

Recommendations:

Data is indicative of motor bearing defects particularly the ODE bearing. This issue appears to be at a low level at this time. We are monitoring this closely.

Rinse Compressor CLASS II



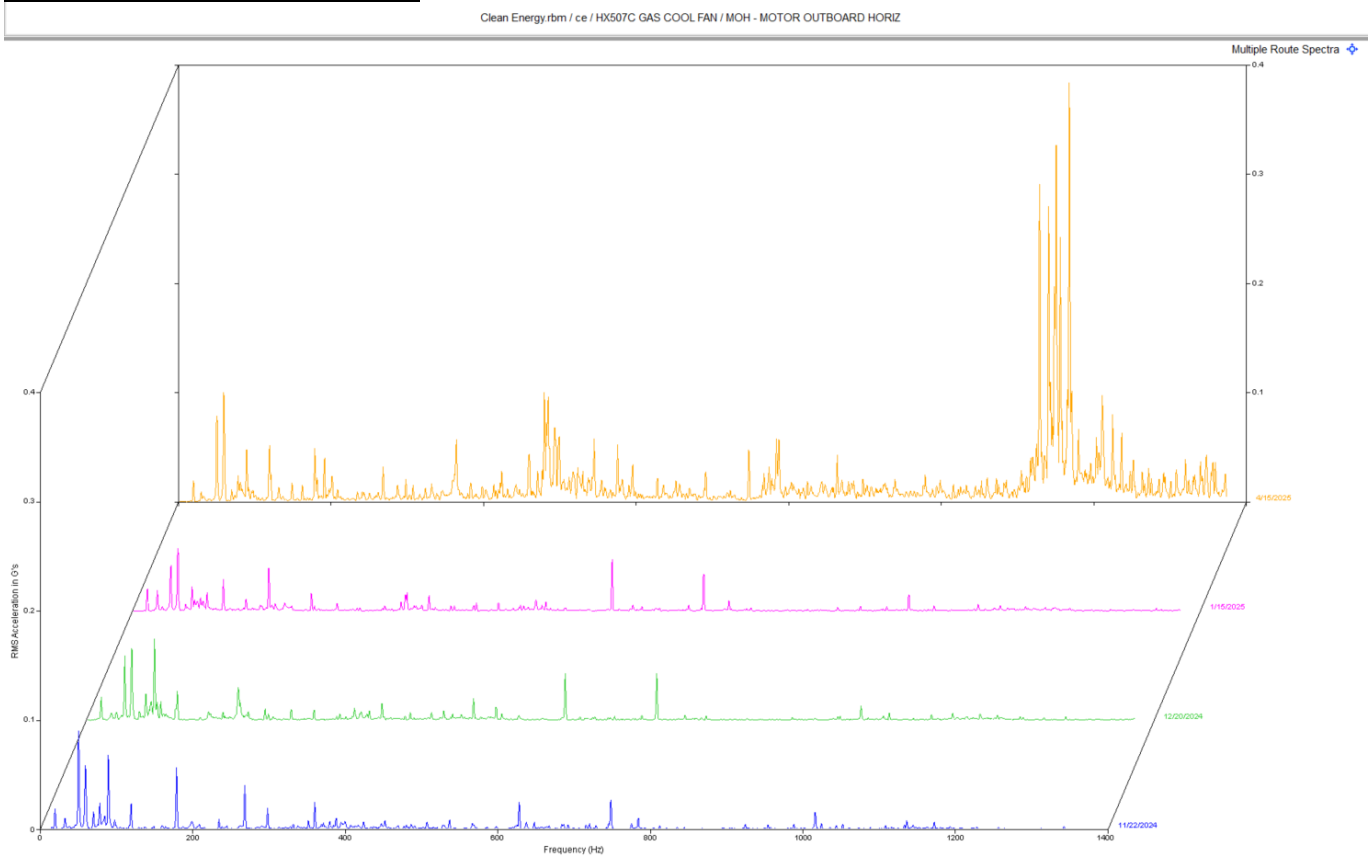
Observations:

Drive motor data shows some high frequency vibration. Motor is also making a squealing type noise. The last reading showed amplitude to be 2.1 g's on average. Spectral data shows a noise floor 1500-5000 hz range. Peak to peak waveform amplitude is around 12 g's.

Recommendations:

Vibration characteristics indicate a lube issue or bearing wear. Motor likely needs attention during next extended shutdown. We are monitoring this closely. Rated as a **CLASS II** defect for now.

HX507C Gas Cool Fan CLASS II



Observations:

Waterfall spectra of the ODE motor bearing shows an increase in mid to high frequency vibration. The majority of the peaks appear to be non-synchronous.

Recommendations:

Data is indicative of motor bearing defects. For now, ensure motor bearings are properly lubricated. Motor may need to be replaced in the next few months. We are monitoring this closely.

Abbreviated Last Measurement Summary

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Database: Clean Energy.rbm
Area: millington plant

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
302 FLARE - 302 FLARE BLOWER	(15-Apr-25)	
	OVERALL LEVEL	1K-20KHz
MOH	.070 In/Sec	2.057 G-s
MOV	.032 In/Sec	.428 G-s
MIH	.049 In/Sec	1.164 G-s
MIV	.057 In/Sec	.325 G-s
MIA	.043 In/Sec	.342 G-s
EIH	.057 In/Sec	.366 G-s
EIV	.114 In/Sec	.117 G-s
EIA	.041 In/Sec	.127 G-s
EOH	.076 In/Sec	.173 G-s
EOV	.173 In/Sec	.071 G-s
RINSE COMP - RINSE COMPRESSOR	(15-Apr-25)	
	OVERALL LEVEL	1K-20KHz
MOH	.177 In/Sec	2.194 G-s
M1P	1.292 G-s	
MIH	.095 In/Sec	1.113 G-s
M2P	.377 G-s	
MIA	.124 In/Sec	.160 G-s
IIH	.096 In/Sec	.586 G-s
IIA	.124 In/Sec	.224 G-s
IOH	.112 In/Sec	.569 G-s
OIH	.081 In/Sec	.962 G-s
OIA	.109 In/Sec	.211 G-s
OOH	.090 In/Sec	1.070 G-s
VAC COMP - VACUUM COMPRESSOR	(15-Apr-25)	
	OVERALL LEVEL	1K-20KHz
MOH	.148 In/Sec	1.935 G-s
MIH	.139 In/Sec	2.323 G-s
MIA	.069 In/Sec	.173 G-s
IIH	.126 In/Sec	.490 G-s
IIA	.160 In/Sec	.097 G-s
IOH	.087 In/Sec	.999 G-s
OIH	.110 In/Sec	.514 G-s
OIA	.063 In/Sec	.120 G-s
OOH	.116 In/Sec	1.053 G-s
COOLFAN1 - COOLING FAN 1	(15-Apr-25)	
	OVERALL LEVEL	1K-20KHz
MOH	.019 In/Sec	.402 G-s
MOV	.028 In/Sec	.103 G-s
MIH	.018 In/Sec	.378 G-s
MIV	.016 In/Sec	.105 G-s
MIA	.029 In/Sec	.081 G-s
101A COMP - 101A FEED COMPRESSOR	(15-Apr-25)	
	OVERALL LEVEL	1K-20KHz
MOH	.062 In/Sec	.302 G-s
MIH	.078 In/Sec	.290 G-s
MIA	.067 In/Sec	.309 G-s
IIH	.154 In/Sec	1.248 G-s
IIA	.101 In/Sec	.873 G-s
IOH	.112 In/Sec	1.295 G-s
OIH	.092 In/Sec	1.940 G-s
OIA	.139 In/Sec	1.036 G-s
OOH	.127 In/Sec	1.080 G-s

HX132A FAN - HX132A GAS OIL COOLER FAN (15-Apr-25)

	OVERALL LEVEL	1K-20KHz
EIH	.041 In/Sec	.060 G-s
EOH	.055 In/Sec	.072 G-s

451A PUMP - 451A VACCUM PUMP (15-Apr-25)

	OVERALL LEVEL	1K-20KHz
MOH	.075 In/Sec	1.084 G-s
MOV	.085 In/Sec	.536 G-s
MIH	.099 In/Sec	.496 G-s
MIV	.121 In/Sec	.615 G-s
MIA	.056 In/Sec	.232 G-s
EIH	.153 In/Sec	1.673 G-s
EIV	.143 In/Sec	.244 G-s
EIA	.070 In/Sec	.326 G-s
EOH	.188 In/Sec	.450 G-s
EOV	.247 In/Sec	.102 G-s

HX453A FAN - HX453A VAC PUMP OIL COOL FAN (15-Apr-25)

	OVERALL LEVEL	1K-20KHz
MOH	.193 In/Sec	.107 G-s
MIH	.131 In/Sec	.112 G-s

451B PUMP - 451B VACCUM PUMP (15-Apr-25)

	OVERALL LEVEL	1K-20KHz
MOH	.042 In/Sec	.549 G-s
MOV	.072 In/Sec	.132 G-s
MIH	.060 In/Sec	.457 G-s
MIV	.081 In/Sec	.177 G-s
MIA	.028 In/Sec	.095 G-s
EIH	.179 In/Sec	.384 G-s
EIV	.194 In/Sec	.227 G-s
EIA	.132 In/Sec	.213 G-s
EOH	.164 In/Sec	.685 G-s
EOV	.217 In/Sec	.171 G-s

HX453B FAN - HX453B VAC PUMP OIL COOL FAN (15-Apr-25)

	OVERALL LEVEL	1K-20KHz
MOH	.148 In/Sec	.170 G-s
MIH	.114 In/Sec	.145 G-s

451C PUMP - 451C VACCUM PUMP (15-Apr-25)

	OVERALL LEVEL	1K-20KHz
MOH	.068 In/Sec	.700 G-s
MOV	.075 In/Sec	.135 G-s
MIH	.087 In/Sec	.340 G-s
MIV	.095 In/Sec	.099 G-s
MIA	.040 In/Sec	.070 G-s
EIH	.144 In/Sec	.594 G-s
EIV	.102 In/Sec	.150 G-s
EIA	.101 In/Sec	.194 G-s
EOH	.125 In/Sec	.625 G-s
EOV	.145 In/Sec	.162 G-s

HX453C FAN - HX453C VAC PUMP OIL COOL FAN (15-Apr-25)

	OVERALL LEVEL	1K-20KHz
MOH	.114 In/Sec	.373 G-s
MIH	.091 In/Sec	.138 G-s

451D PUMP - 451D VACCUM PUMP (15-Apr-25)

	OVERALL LEVEL	1K-20KHz
MOH	.056 In/Sec	1.765 G-s
MOV	.065 In/Sec	.498 G-s
MIH	.071 In/Sec	1.184 G-s
MIV	.072 In/Sec	.327 G-s
MIA	.037 In/Sec	.247 G-s
EIH	.144 In/Sec	.402 G-s
EIV	.117 In/Sec	.071 G-s
EIA	.103 In/Sec	.104 G-s

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            EOH                        .172 In/Sec        .887 G-s
            EOV                        .176 In/Sec        .239 G-s

      HX453D FAN - HX453D VAC PUMP OIL COOL FAN  (15-Apr-25)
                                    OVERALL LEVEL     1K-20KHz
            MOH                        .211 In/Sec        .133 G-s
            MIH                        .223 In/Sec        .113 G-s

      506C COMP  - 506C PRODUCT COMPRESSOR       (15-Apr-25)
                                    OVERALL LEVEL     1K-20KHz
            MOH                        .076 In/Sec        .531 G-s
            MIH                        .080 In/Sec        .594 G-s
            MIA                        .074 In/Sec        .322 G-s
            IIH                        .194 In/Sec       1.130 G-s
            IIA                        .172 In/Sec       1.728 G-s
            IOH                        .253 In/Sec       3.194 G-s
            OIH                        .242 In/Sec       3.024 G-s
            OIA                        .184 In/Sec       1.408 G-s
            OOH                        .213 In/Sec       1.398 G-s

      HX507C FAN - HX507C GAS COOL FAN           (15-Apr-25)
                                    OVERALL LEVEL     1K-20KHz
            MOH                        .279 In/Sec       2.002 G-s
            MIH                        .341 In/Sec       1.708 G-s

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   Clarification Of Vibration Units:
      Acc       -->  G-s       RMS
      Vel       -->  In/Sec    PK
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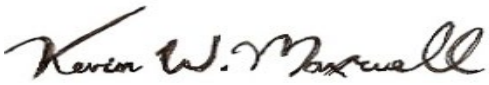
As always, it has been a pleasure to serve North Shelby-Archaea Energy. If there are any comments or questions, do not hesitate to contact us.

Sincerely,



ISO Certified Vibration Analyst, Category III

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