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April 1, 2021

Archaea Energy
North Shelby Plant
Millington, TN

The following is a summary of findings from the March 2021 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

303 Flare Blower

Blower was not in operation during this survey: however, the following likely still applies: Data of the blower indicates some non-synchronous harmonic vibration with raised noise floor in spectra. This is an odd vibration that has appeared since recently replacing internal blower components. There may be a rub or bind in the blower bearings. Overall amplitude was higher in the drive end. The seals could also possibly be rubbing and may be causing the noise and low frequency modulation seen in the blower spectra. Inspect blower unit as soon as scheduling allows. Rated as a **HIGH CLASS II** defect.

451A Vacuum Pump MOTOR

Motor has had a sudden peak appear in DE bearing spectral data. This peak appears to be a harmonic of the outer race defect frequency. This will be monitored very closely, and we will likely come back out next week and recheck this motor. Rated as a **CLASS I** defect for now.

451D Vacuum Pump MOTOR

Motor has had an electrically related vibration since its inception. Likely a rotor bar influenced vibration. We are monitoring this closely from month to month. Rated as a **CLASS I** defect.

506 A Product Compressor

Compressor has had higher vibration since rebuilding unit. Spectral data shows vibration to be highest at 2 x rpm. The data on average show some rpm harmonics in the spectra, not a dominant 2 x rpm vibration. Process flow may influence vibration some; however, compressor may have internal issue. We will monitor this very closely. Rated as a **CLASS I** defect for now.

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Abbreviated Last Measurement Summary
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                Database:  Clean Energy.rbm
                Area:      millington plant


       MEASUREMENT POINT             OVERALL LEVEL       HFD / VHFD
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       302 FLARE  - 302 FLARE BLOWER               (31-Mar-22)
                                    OVERALL LEVEL     1K-20KHz
              MOH                     .052 In/Sec       .955 G-s
              MOV                     .042 In/Sec       .287 G-s
              MIH                     .075 In/Sec       .390 G-s
              MIV                     .044 In/Sec       .114 G-s
              MIA                     .063 In/Sec       .364 G-s
              EIH                     .119 In/Sec       .299 G-s
              EIV                     .109 In/Sec       .238 G-s
              EIA                     .056 In/Sec       .503 G-s
              EOH                     .085 In/Sec       .127 G-s
              EOV                     .124 In/Sec       .141 G-s

       101A COMP  - 101A FEED COMPRESSOR           (31-Mar-22)
                                    OVERALL LEVEL     1K-20KHz
              MOH                     .036 In/Sec       .286 G-s
              MIH                     .048 In/Sec       .293 G-s
              MIA                     .029 In/Sec       .291 G-s
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	IIH	.108 In/Sec	1.272 G-s
	IIA	.186 In/Sec	.682 G-s
	IOH	.113 In/Sec	1.364 G-s
	OIH	.115 In/Sec	2.514 G-s
	OIA	.099 In/Sec	1.068 G-s
	OOH	.106 In/Sec	2.117 G-s

HX132A FAN - HX132A GAS OIL COOLER FAN (31-Mar-22)

	OVERALL LEVEL	1K-20KHz
EIH	.058 In/Sec	.048 G-s
EOH	.099 In/Sec	.101 G-s

451A PUMP - 451A VACCUM PUMP (31-Mar-22)

	OVERALL LEVEL	1K-20KHz
MOH	.074 In/Sec	.665 G-s
MOV	.101 In/Sec	.541 G-s
MIH	.085 In/Sec	.968 G-s
MIV	.135 In/Sec	1.811 G-s
MIA	.068 In/Sec	1.193 G-s
EIH	.185 In/Sec	.280 G-s
EIV	.148 In/Sec	.410 G-s
EIA	.134 In/Sec	.200 G-s
EOH	.197 In/Sec	.442 G-s
EOV	.181 In/Sec	.295 G-s

HX453A FAN - HX453A VAC PUMP OIL COOL FAN (31-Mar-22)

	OVERALL LEVEL	1K-20KHz
MOH	.134 In/Sec	.123 G-s
MIH	.101 In/Sec	.104 G-s

451B PUMP - 451B VACCUM PUMP (31-Mar-22)

	OVERALL LEVEL	1K-20KHz
MOH	.063 In/Sec	.379 G-s
MOV	.110 In/Sec	.298 G-s
MIH	.073 In/Sec	.567 G-s
MIV	.099 In/Sec	.312 G-s
MIA	.040 In/Sec	.340 G-s
EIH	.149 In/Sec	.499 G-s
EIV	.111 In/Sec	.280 G-s
EIA	.111 In/Sec	.176 G-s
EOH	.168 In/Sec	.465 G-s
EOV	.193 In/Sec	.260 G-s

HX453B FAN - HX453B VAC PUMP OIL COOL FAN (31-Mar-22)

	OVERALL LEVEL	1K-20KHz
MOH	.173 In/Sec	.183 G-s
MIH	.099 In/Sec	.142 G-s

451C PUMP - 451C VACCUM PUMP (31-Mar-22)

	OVERALL LEVEL	1K-20KHz
MOH	.066 In/Sec	.968 G-s
MOV	.082 In/Sec	.182 G-s
MIH	.087 In/Sec	.701 G-s
MIV	.150 In/Sec	.222 G-s
MIA	.058 In/Sec	.210 G-s
EIH	.150 In/Sec	.730 G-s
EIV	.135 In/Sec	.401 G-s
EIA	.120 In/Sec	.449 G-s
EOH	.203 In/Sec	.481 G-s
EOV	.236 In/Sec	.304 G-s

HX453C FAN - HX453C VAC PUMP OIL COOL FAN (31-Mar-22)

	OVERALL LEVEL	1K-20KHz
MOH	.098 In/Sec	.235 G-s
MIH	.088 In/Sec	.138 G-s

451D PUMP - 451D VACCUM PUMP (31-Mar-22)

	OVERALL LEVEL	1K-20KHz
MOH	.064 In/Sec	.809 G-s
MOV	.150 In/Sec	.302 G-s

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            MIH                        .114 In/Sec      1.149 G-s
            MIV                        .112 In/Sec       .437 G-s
            MIA                        .064 In/Sec       .662 G-s
            EIH                        .164 In/Sec      1.081 G-s
            EIV                        .115 In/Sec       .249 G-s
            EIA                        .118 In/Sec       .186 G-s
            EOH                        .160 In/Sec       .538 G-s
            EOV                        .130 In/Sec       .190 G-s

      HX453D FAN - HX453D VAC PUMP OIL COOL FAN  (31-Mar-22)
                                  OVERALL LEVEL     1K-20KHz
            MOH                    .182 In/Sec       .108 G-s
            MIH                    .211 In/Sec       .061 G-s

      506A COMP  - 506A PRODUCT COMPRESSOR       (31-Mar-22)
                                  OVERALL LEVEL     1K-20KHz
            MOH                    .056 In/Sec       .511 G-s
            MIH                    .055 In/Sec      1.830 G-s
            MIA                    .067 In/Sec       .565 G-s
            IIH                    .452 In/Sec      2.434 G-s
            IIA                    .273 In/Sec      1.165 G-s
            IOH                    .387 In/Sec      2.796 G-s

      HX507A FAN - HX507A GAS COOL FAN           (31-Mar-22)
                                  OVERALL LEVEL     1K-20KHz
            MOH                    .263 In/Sec       .101 G-s
            MIH                    .217 In/Sec       .076 G-s

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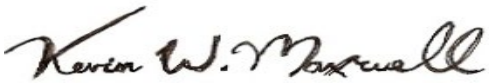
As always, it has been a pleasure to serve North Shelby-Archaea Energy. If there are any comments or questions, do not hesitate to contact us.

Sincerely,



ISO Certified Vibration Analyst, Category III

HI-SPEED INDUSTRIAL SERVICE

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