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September 25, 2024

South Shelby RNG
Memphis, TN

The following is a summary of findings from the monthly vibration survey that was performed on September 24, 2024.

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

Hi-Speed **Industrial Service** tests and inspects industrial machinery and equipment and makes recommendations concerning maintenance and repairs based on its experience in the field of industrial repair and maintenance. The information contained herein is provided as an opinion only, not as a guaranty or warranty of the matters discussed herein.

Defects

C-551A Vacuum Compressor A
Compressor has increased amplitude this survey. Harmonics of 4 x rpm can be seen. Compressor also seemed noisier this survey as well. Data indicates some internal wear of the compressor may be present. Monitoring this closely. Rated as a **CLASS II** defect.

C-0600 A Feed Gas Compressor
Compressor data is shows some high 1 x input rpm vibration especially in the vertical direction. Check compressor fasteners and ensure compressor does have a soft foot. Ensure compressor adapter blocks aren't bowed and are flush with the main base. Rated as a **CLASS II** defect.

C-0600 B Feed Gas Compressor
There is some 4 x rpm (lobe pass) and harmonics of 4 x in the compressor spectra. We will continue to monitor this closely. Rated as a **CLASS I** defect.

C-0600 C Feed Gas Compressor
Compressor data also shows high harmonic vibrations that are related to 1 x male and female rotor and 4 x rpm of the male rotor. Compressor likely has internal fit looseness/wear. Compressor will need attention soon. Motor has some 1 x rpm vibration as well. When installing new compressor, ensure motor and compressor do not have soft foot condition. Inspect coupling hubs and element also. Rated as a **CLASS III** defect.

BLR-0200 B, Blower MOTOR
Motor data is showing an increase in non-synchronous vibration, noise floor, and 1-20 kHz. amplitude. There are all indications of bearing issues in the motor. This could be a lube issue, but is more likely to be caused by defective motor bearings. Motor should be inspected soon. Rated as a **CLASS II** defect.

C-1300 Sales Gas Compressor Stage 1
Compressor drive end data still shows some high frequency vibration that may be related to gear mesh frequency of the internal mating gears. Amplitude is slightly lower this survey, but these peaks are still present. We need more internal information such as gear ratio and number of gear teeth to confirm issue. Rated as a **CLASS I** defect for now.

Abbreviated Last Measurement Summary

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Database: South Shelby RNG.rbm
Area: SOUTH SHELBY PLANT

MEASUREMENT POINT		OVERALL LEVEL	HFD / VHFD
C-551B	- C-551B VACUUM COMPRESSOR B	(24-Sep-24)	
		OVERALL LEVEL	1K-20KHz
	MOH	.065 In/Sec	3.473 G-s
	MOV	.068 In/Sec	.344 G-s
	MIH	.109 In/Sec	1.479 G-s
	MIV	.092 In/Sec	.345 G-s
	MIA	.078 In/Sec	.359 G-s
	CIA	.178 In/Sec	.893 G-s
	CIH	.169 In/Sec	2.725 G-s
	CIV	.235 In/Sec	.619 G-s
	COH	.212 In/Sec	4.467 G-s
	COV	.207 In/Sec	1.157 G-s
	COA	.137 In/Sec	1.125 G-s
C-551A	- C-551A VACUUM COMPRESSOR A	(24-Sep-24)	
		OVERALL LEVEL	1K-20KHz
	MOH	.066 In/Sec	1.542 G-s
	MOV	.055 In/Sec	.256 G-s
	MIH	.107 In/Sec	1.219 G-s
	MIV	.064 In/Sec	.268 G-s
	MIA	.054 In/Sec	.280 G-s
	CIA	.449 In/Sec	.497 G-s
	CIH	.199 In/Sec	2.884 G-s
	CIV	.380 In/Sec	1.026 G-s
	COH	.313 In/Sec	5.732 G-s
	COV	.228 In/Sec	1.329 G-s
	COA	.184 In/Sec	1.269 G-s
C-601B	- C-601B N2 RECYCLE COMP B	(24-Sep-24)	
		OVERALL LEVEL	1K-20KHz
	MOH	.079 In/Sec	.374 G-s
	MOV	.031 In/Sec	.193 G-s
	MIH	.097 In/Sec	.443 G-s
	MIV	.059 In/Sec	.116 G-s
	MIA	.044 In/Sec	.086 G-s
	CIA	.074 In/Sec	.718 G-s
	CIH	.117 In/Sec	2.859 G-s
	CIV	.117 In/Sec	.398 G-s
	COH	.096 In/Sec	3.044 G-s
	COV	.114 In/Sec	.665 G-s
	COA	.088 In/Sec	.760 G-s
C-601A	- C-601A N2 RECYCLE COMP A	(24-Sep-24)	
		OVERALL LEVEL	1K-20KHz
	MOH	.050 In/Sec	.618 G-s
	MOV	.026 In/Sec	.167 G-s
	MIH	.081 In/Sec	.848 G-s
	MIV	.030 In/Sec	.247 G-s
	MIA	.030 In/Sec	.236 G-s
	CIA	.187 In/Sec	.639 G-s
	CIH	.132 In/Sec	1.468 G-s
	CIV	.292 In/Sec	.320 G-s
	COH	.085 In/Sec	2.222 G-s
	COV	.093 In/Sec	.516 G-s
	COA	.077 In/Sec	.683 G-s
C-0600A	- C-0600A FEED GAS COMP A	(24-Sep-24)	
		OVERALL LEVEL	1K-20KHz
	MOH	.095 In/Sec	.377 G-s
	MOV	.071 In/Sec	.163 G-s

MIH	.089 In/Sec	.613 G-s
MIV	.051 In/Sec	.151 G-s
MIA	.055 In/Sec	.112 G-s
CIA	.375 In/Sec	.405 G-s
CIH	.402 In/Sec	2.066 G-s
CIV	.847 In/Sec	.399 G-s
COH	.298 In/Sec	1.544 G-s
COV	.641 In/Sec	.432 G-s
COA	.354 In/Sec	.605 G-s

C-0600B - C-0600B FEED GAS COMP B (24-Sep-24)

	OVERALL LEVEL	1K-20KHz
MOH	.161 In/Sec	.381 G-s
MOV	.078 In/Sec	.147 G-s
MIH	.199 In/Sec	.570 G-s
MIV	.133 In/Sec	.292 G-s
MIA	.085 In/Sec	.239 G-s
CIA	.264 In/Sec	1.314 G-s
CIH	.396 In/Sec	2.431 G-s
CIV	.682 In/Sec	.991 G-s
COH	.494 In/Sec	2.434 G-s
COV	.556 In/Sec	.894 G-s
COA	.332 In/Sec	1.051 G-s

C-0600C - C-0600C FEED GAS COMP C (24-Sep-24)

	OVERALL LEVEL	1K-20KHz
MOH	.369 In/Sec	.279 G-s
MOV	.388 In/Sec	.153 G-s
MIH	.384 In/Sec	.388 G-s
MIV	.102 In/Sec	.271 G-s
MIA	.192 In/Sec	.224 G-s
CIA	.660 In/Sec	.912 G-s
CIH	.637 In/Sec	2.731 G-s
CIV	.507 In/Sec	.876 G-s
COH	.464 In/Sec	1.906 G-s
COV	.887 In/Sec	.787 G-s
COA	.671 In/Sec	.710 G-s

BLR-0200A - BLR-0200A LFG BLOWER A (24-Sep-24)

	OVERALL LEVEL	1K-20KHz
MOH	.090 In/Sec	2.142 G-s
MOV	.064 In/Sec	.420 G-s
MIH	.118 In/Sec	3.167 G-s
MIV	.113 In/Sec	.564 G-s
MIA	.076 In/Sec	.840 G-s
BIA	.114 In/Sec	.575 G-s
BIH	.179 In/Sec	4.003 G-s
BIV	.486 In/Sec	.487 G-s
BOH	.193 In/Sec	3.288 G-s
BOV	.350 In/Sec	.744 G-s
BOA	.115 In/Sec	.935 G-s

BLR-0200C - BLR-0200C LFG BLOWER C (24-Sep-24)

	OVERALL LEVEL	1K-20KHz
MOH	.084 In/Sec	1.095 G-s
MOV	.120 In/Sec	.255 G-s
MIH	.084 In/Sec	1.190 G-s
MIV	.124 In/Sec	.209 G-s
MIA	.091 In/Sec	.314 G-s
BIA	.382 In/Sec	3.296 G-s
BIV	.589 In/Sec	3.855 G-s
BOH	.935 In/Sec	20.16 G-s
BOV	.460 In/Sec	4.207 G-s
BOA	.306 In/Sec	3.351 G-s

BLR-0200D - BLR-0200D LFG BLOWER D (24-Sep-24)

	OVERALL LEVEL	1K-20KHz
MOH	.088 In/Sec	.833 G-s
MOV	.081 In/Sec	.278 G-s
MIH	.056 In/Sec	1.137 G-s

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            MIV                      .194 In/Sec       .215 G-s
            MIA                      .081 In/Sec       .238 G-s
            BIA                      .183 In/Sec      3.024 G-s
            BIV                      .454 In/Sec      2.933 G-s
            BOV                      .421 In/Sec      3.565 G-s
            BOA                      .218 In/Sec      3.053 G-s

      C-1300     - C-1300 SALES GAS COMP STG 1   (24-Sep-24)
                                    OVERALL LEVEL     1K-20KHz
            MOH                      .091 In/Sec       .459 G-s
            MOV                      .073 In/Sec       .093 G-s
            MIH                      .088 In/Sec       .570 G-s
            MIV                      .281 In/Sec       .196 G-s
            MIA                      .169 In/Sec       .093 G-s
            CIA                      .268 In/Sec       .546 G-s
            CIH                      .245 In/Sec      3.861 G-s
            CIV                      .283 In/Sec       .837 G-s
            COH                      .201 In/Sec      2.372 G-s
            COV                      .218 In/Sec       .428 G-s
            COA                      .234 In/Sec       .674 G-s

      C-1304     - C-1304 SALES GAS COMP STG 2   (24-Sep-24)
                                    OVERALL LEVEL     1K-20KHz
            MOH                      .126 In/Sec       .990 G-s
            MOV                      .103 In/Sec       .451 G-s
            MIH                      .153 In/Sec      1.083 G-s
            MIV                      .080 In/Sec       .452 G-s
            MIA                      .087 In/Sec       .264 G-s
            CIA                      .168 In/Sec       .218 G-s
            CIH                      .186 In/Sec       .570 G-s
            CIV                      .132 In/Sec       .356 G-s
            COH                      .194 In/Sec       .463 G-s
            COV                      .168 In/Sec       .185 G-s
            COA                      .114 In/Sec       .143 G-s
            1SH                      .197 In/Sec       .575 G-s
            1SV                      .169 In/Sec       .203 G-s
            1SA                      .214 In/Sec       .190 G-s
            2SH                      .241 In/Sec       .824 G-s
            2SV                      .215 In/Sec       .261 G-s
            2SA                      .240 In/Sec       .300 G-s

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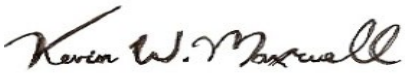
As always, it has been a pleasure to serve South Shelby RNG. If there are any comments or questions, do not hesitate to contact us.

Sincerely,



ISO Certified Vibration Analyst, Category III

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