



QualiTest® Diagnostics

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December 22, 2021

Tim Busby
Mark Busby
Atlantic Dry Ice
Brandon, MS

Tim/Mark,

The following is a summary of findings from the quarterly vibration survey on the Ammonia Compressors at the Brandon, MS plant. Please let us know if there are any questions or comments.

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.

C-1 Ammonia Compressor

Electrical vibrations are not present this survey, however there is an increase in 1 and 2 x rpm vibrations in the motor. This indicates coupling and or alignment issues. It is highly recommended to inspect the couplings for wear and ensure alignment is within tolerances. Hi-Speed offers alignment services. We have many years in shaft alignment experience and would be glad to perform this work for you. Rated as a **CLASS II** defect.

C-2 Ammonia Compressor

Motor has increased 120 Hz (2 x line frequency) vibration which may indicate electrical issues in the rotor and or stator. Compressor data still shows some signs of internal wear of the compressor. We will continue to monitor this closely. Rated as a **CLASS II** defect.

C-3 Ammonia Compressor

Vibration data showed no issues were present during this survey. No actions recommended at this time.

Abbreviated Last Measurement Summary

Database: Atlantic Dry Ice.rbm
Area: Brandon MS Plant
Route No. 1: ADI BRANDON MS

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
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C-1	- C-1 AMMONIA COMPRESSOR	(21-Dec-21)
	OVERALL LEVEL	1K-20KHz
MOH	.290 In/Sec	.323 G-s
MOV	.144 In/Sec	.213 G-s
MIH	.148 In/Sec	.425 G-s
MIV	.210 In/Sec	.283 G-s
MIA	.221 In/Sec	.185 G-s
CIA	.095 In/Sec	.220 G-s
CIH	.132 In/Sec	.239 G-s
CIV	.141 In/Sec	.181 G-s
COH	.042 In/Sec	.428 G-s
COV	.109 In/Sec	.146 G-s
C-2	- C-2 AMMONIA COMPRESSOR	(21-Dec-21)
	OVERALL LEVEL	1K-20KHz
MOH	.145 In/Sec	1.251 G-s
MOV	.133 In/Sec	.442 G-s
MIH	.131 In/Sec	.948 G-s
MIV	.097 In/Sec	.340 G-s
MIA	.128 In/Sec	.209 G-s
CIA	.269 In/Sec	.466 G-s
CIH	.076 In/Sec	.721 G-s
CIV	.412 In/Sec	.376 G-s
COH	.090 In/Sec	.403 G-s
COV	.118 In/Sec	.563 G-s
C-3	- C-3 AMMONIA COMPRESSOR	(21-Dec-21)
	OVERALL LEVEL	1K-20KHz
MOH	.060 In/Sec	.777 G-s
MOV	.085 In/Sec	.142 G-s
MIH	.066 In/Sec	.647 G-s
MIV	.069 In/Sec	.307 G-s
MIA	.050 In/Sec	.266 G-s
CIA	.080 In/Sec	.147 G-s
CIH	.068 In/Sec	.337 G-s
CIV	.093 In/Sec	.189 G-s

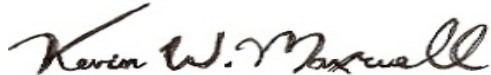
COH	.052 In/Sec	.519 G-s
COV	.111 In/Sec	.321 G-s

Clarification Of Vibration Units:

Acc	-->	G-s	RMS
Vel	-->	In/Sec	PK

As always, it has been a pleasure to serve Atlantic Dry Ice. If there are any comments or questions, do not hesitate to contact us.

Sincerely,



ISO Certified Vibration Analyst, Category III



QualiTest® Diagnostics

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