



QualiTest® Diagnostics

7030 Ryburn Dr. Millington, TN

Phone: (901) 873-5300

Fax: (901) 873-5301

www.gohispeed.com

September 5, 2024

Nucor General Recycling

Subject: September vibration survey

Most of the machines surveyed were found to be in good condition except for the following.

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.

As always, it has been a pleasure to serve Nucor General Recycling. If there are any comments or questions, do not hesitate to contact us.

Sincerely,

ISO Certified Vibration Analyst, Category III

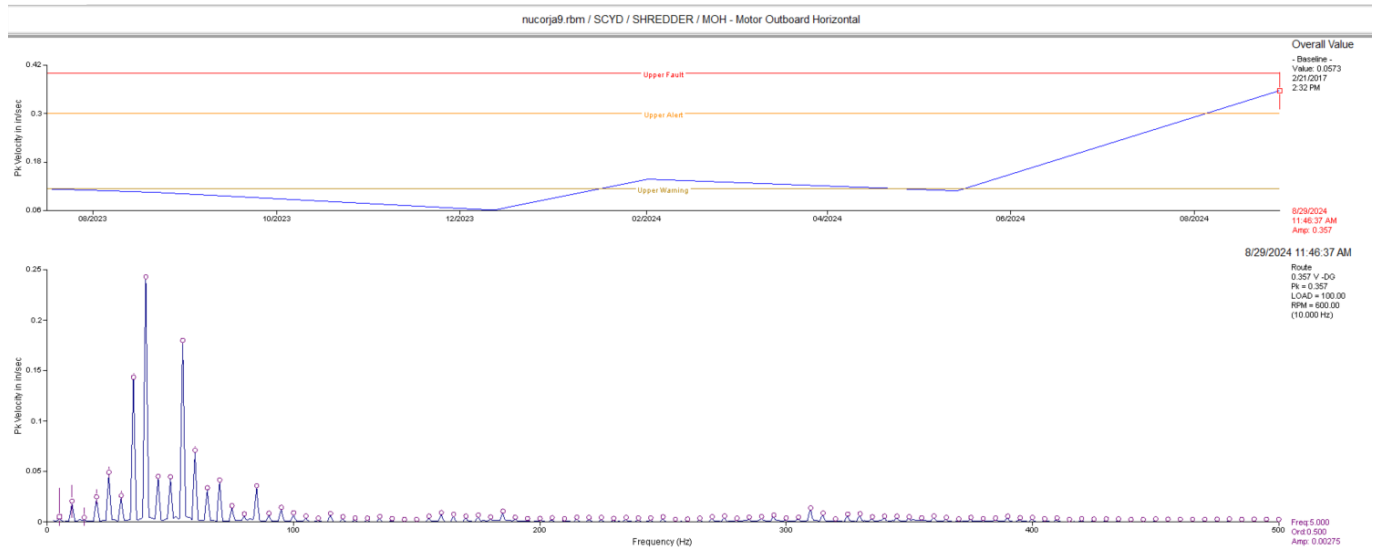


QualiTest® Diagnostics

Cell: 901-486-4565

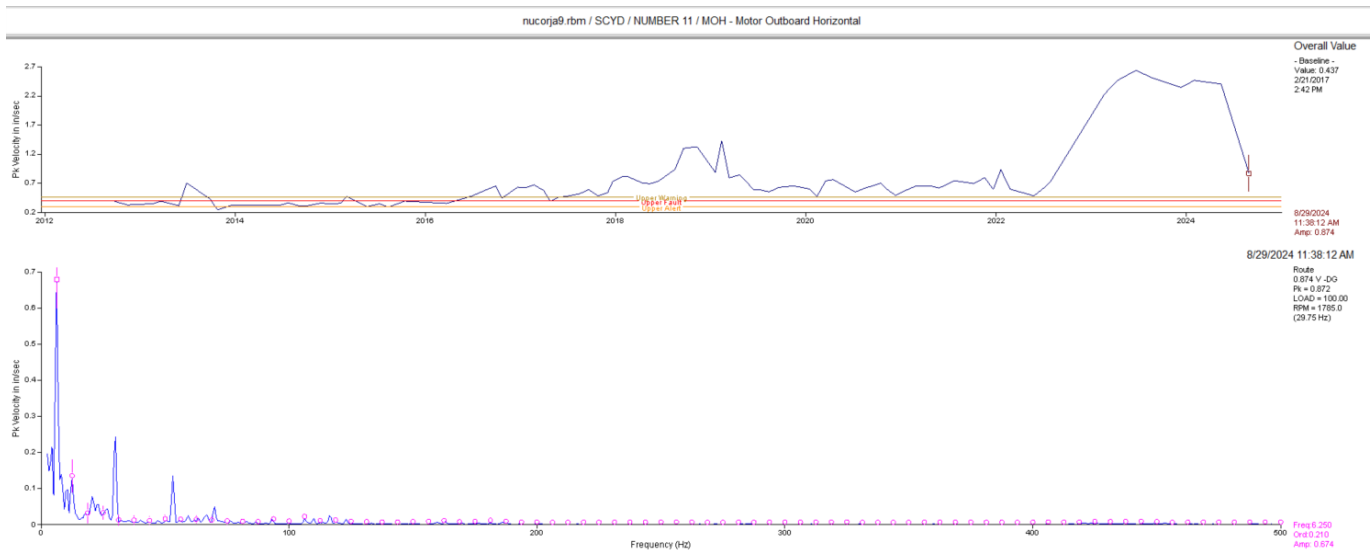
Email: kwilliam@gohispeed.com

Defects



Shredder

Motor has increased overall vibration. Peaks in MOH spectrum (ODE) show $\frac{1}{2}$ harmonics with a 4 x rpm vibration. $\frac{1}{2}$ harmonics typically indicate fit type mechanical looseness/wear. Check driveshaft, shredder rotor, and indexer for signs of fit looseness. Inspect unit soon. Rated as a **CLASS II** defect.



Conveyor 11

Overall vibration is lower since last survey but still remains above alarm level. Vib appears to be at a low frequency of 6 Hz. This may be belt frequency or output frequency. Ensure sheaves are aligned properly. Ensure conveyor shaft or gear output shaft is not bent. Gearbox data also shows some signs of internal wear. Rated as a **CLASS II** defect.

Abbreviated Last Measurement Summary

Database: nucorja9.rbm
Station: Scrap Yard

MEASUREMENT POINT -----	OVERALL LEVEL -----	HFD / VHFD -----
SHREDDER - SHREDDER (29-Aug-24)		
	OVERALL LEVEL	1K-20KHz
MOH	.357 In/Sec	.060 G-s
MOV	.254 In/Sec	.039 G-s
MIV	.265 In/Sec	.176 G-s
MIH	.339 In/Sec	.123 G-s
MIA	.274 In/Sec	.266 G-s
CYCLONE - CYCLONE (29-Aug-24)		
	OVERALL LEVEL	1K-20KHz
MOH	.108 In/Sec	.366 G-s
MIH	.207 In/Sec	.986 G-s
MIA	.260 In/Sec	.626 G-s
EIH	.142 In/Sec	.141 G-s
EOH	.145 In/Sec	.122 G-s
M3 - MAG DRUM (29-Aug-24)		
	OVERALL LEVEL	1K-20KHz
MOH	.083 In/Sec	.239 G-s
MIH	.074 In/Sec	.297 G-s
MIA	.063 In/Sec	.104 G-s
GIH	.035 In/Sec	.052 G-s
GOH	.036 In/Sec	.077 G-s
IDB	.030 In/Sec	.014 G-s
ODB	.026 In/Sec	.0045 G-s
NUMBER 11 - NUMBER 11 (29-Aug-24)		
	OVERALL LEVEL	1K-20KHz
MOH	.874 In/Sec	1.468 G-s
MIH	.942 In/Sec	1.410 G-s
MIA	.668 In/Sec	.416 G-s
EIH	.544 In/Sec	4.303 G-s
EIA	.884 In/Sec	12.26 G-s
EOH	.314 In/Sec	.481 G-s
NAIRCOMP - NEW SEPARATOR NORTH AIR COMP (29-Aug-24)		
	OVERALL LEVEL	1K-20KHz
MOH	.066 In/Sec	.320 G-s
MIH	.057 In/Sec	.940 G-s
MIA	.074 In/Sec	1.099 G-s
EIH	.044 In/Sec	.684 G-s
EIA	.051 In/Sec	.541 G-s
EOH	.073 In/Sec	.827 G-s

Clarification Of Vibration Units:

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