



QualiTest® Diagnostics

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August 23rd, 2023

Nucor General Recycling

Subject: August 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

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Defects

Conveyor 11

Motor vibrating over **2.7 inches per second** which is **extremely** high Inspect motor base/frame for looseness, cracks. Conveyor drum shaft should also be checked for run-out, looseness. **Repair/replace unit soon**. Rated as a **CLASS IV** defect.

Mag Drum Drive

Motor and gear drive both have elevated vibration. The unit is physically jumping and has broken the base for the gear drive. Base is cracked and need repaired/replaced asap. Inspect motor/gear drive, base and sprocket/chain for issues asap. Rated as a **CLASS III** defect.

Cyclone Fan

Outboard (opposite drive end) fan bearing data is indicating some minor bearing defects. We will continue to monitor this closely. Rated as a **CLASS I** defect.

Abbreviated Last Measurement Summary

Database: nucorja9.rbm

Station: Scrap Yard

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
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SHREDDER - SHREDDER	(22-Aug-23)	
	OVERALL LEVEL	1K-20KHz
MOH	.105 In/Sec	.098 G-s
MOV	.089 In/Sec	.064 G-s
MIV	.080 In/Sec	.096 G-s
MIH	.097 In/Sec	.171 G-s
MIA	.069 In/Sec	.100 G-s
CYCLONE - CYCLONE	(22-Aug-23)	
	OVERALL LEVEL	1K-20KHz
MOH	.110 In/Sec	.471 G-s
MIH	.099 In/Sec	1.307 G-s
MIA	.131 In/Sec	1.069 G-s
EIH	.134 In/Sec	.227 G-s
EOH	.206 In/Sec	.029 G-s
M3 - MAG DRUM	(22-Aug-23)	
	OVERALL LEVEL	1K-20KHz
MOH	.311 In/Sec	.335 G-s
MIH	.175 In/Sec	.274 G-s
MIA	.342 In/Sec	.052 G-s
GIH	.201 In/Sec	.089 G-s
GOH	.195 In/Sec	.119 G-s
IDB	.040 In/Sec	.015 G-s
ODB	.043 In/Sec	.0042 G-s
NUMBER 11 - NUMBER 11	(22-Aug-23)	
	OVERALL LEVEL	1K-20KHz
MOH	2.512 In/Sec	.271 G-s
MIH	2.745 In/Sec	.696 G-s

MIA	1.961 In/Sec	.474 G-s
EIH	.897 In/Sec	1.336 G-s
EIA	.729 In/Sec	3.411 G-s
EOH	.402 In/Sec	.161 G-s

SAIRCOMP - NEW SEPARATOR SOUTH AIR COMP (22-Aug-23)		
	OVERALL LEVEL	1K-20KHz
MOH	.085 In/Sec	.076 G-s
MIH	.090 In/Sec	.937 G-s
MIA	.078 In/Sec	1.280 G-s
EIH	.065 In/Sec	.885 G-s
EIA	.081 In/Sec	.791 G-s
EOH	.037 In/Sec	.438 G-s

NAIRCOMP - NEW SEPARATOR NORTH AIR COMP (22-Aug-23)		
	OVERALL LEVEL	1K-20KHz
MOH	.072 In/Sec	.304 G-s
MIH	.058 In/Sec	.735 G-s
MIA	.062 In/Sec	1.040 G-s
EIH	.114 In/Sec	.987 G-s
EIA	.063 In/Sec	1.009 G-s
EOH	.057 In/Sec	.519 G-s

Clarification Of Vibration Units:

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