



QualiTest® Diagnostics

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December 14, 2023

Nucor General Recycling

Subject: December 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 **2.5 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.

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
Route No. 1: SCRAP YARD

MEASUREMENT POINT -----	OVERALL LEVEL -----	HFD / VHFD -----
SHREDDER - SHREDDER (12-Dec-23)		
	OVERALL LEVEL	1K-20KHz
MOH	.061 In/Sec	.112 G-s
MOV	.075 In/Sec	.053 G-s
MIV	.070 In/Sec	.202 G-s
MIH	.066 In/Sec	.133 G-s
MIA	.097 In/Sec	.231 G-s
CYCLONE - CYCLONE (12-Dec-23)		
	OVERALL LEVEL	1K-20KHz
MOH	.094 In/Sec	.593 G-s
MIH	.112 In/Sec	.892 G-s
MIA	.117 In/Sec	.161 G-s
EIH	.138 In/Sec	.257 G-s
EOH	.162 In/Sec	.452 G-s
M3 - MAG DRUM (12-Dec-23)		
	OVERALL LEVEL	1K-20KHz
MOH	.060 In/Sec	.262 G-s
MIH	.040 In/Sec	.312 G-s
MIA	.043 In/Sec	.091 G-s
GIH	.028 In/Sec	.043 G-s
GOH	.025 In/Sec	.032 G-s
IDB	.023 In/Sec	.0065 G-s
ODB	.033 In/Sec	.0024 G-s
NUMBER 11 - NUMBER 11 (12-Dec-23)		
	OVERALL LEVEL	1K-20KHz
MOH	2.347 In/Sec	.468 G-s
MIH	2.483 In/Sec	.544 G-s
MIA	1.848 In/Sec	.326 G-s
EIH	.935 In/Sec	2.822 G-s
EIA	.745 In/Sec	3.413 G-s
EOH	.342 In/Sec	.266 G-s

NAIRCOMP - NEW SEPARATOR NORTH AIR COMP (12-Dec-23)

	OVERALL LEVEL	1K-20KHz
MOH	.089 In/Sec	.041 G-s
MIH	.104 In/Sec	.391 G-s
MIA	.074 In/Sec	1.152 G-s
EIH	.083 In/Sec	.862 G-s
EIA	.069 In/Sec	.669 G-s
EOH	.089 In/Sec	.505 G-s

Clarification Of Vibration Units:

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