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January 20, 2022

General Recycling

Subject: January vibration survey

Most of the machines surveyed were found to be in good condition with the exception of 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 General Recycling. If there are any comments or questions, do not hesitate to contact us.

Sincerely,

Kevin W. Maxwell

ISO Certified Vibration Analyst, Category III

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Defects

Shedder Motor

Vibration is lower after replacing the coupling jack-shaft. Highest overall vibration from last month decreased from .397 to .175 ips. No new issues found.

Conveyor 11

This unit has high radial and axial vibration that is likely due to the conveyor drum shaft being bent and the motor base being flexible. Inspect conveyor shaft for excessive run-out soon. Ensure belts and sheaves are aligned properly and not excessively worn. Rated as a **CLASS II** defect.

Cyclone Fan

Outboard (opposite drive end) fan bearing continues to show signs of race defects according to the spectral data. We will continue to monitor this closely. Rated as a **CLASS I** defect for now.

Abbreviated Last Measurement Summary
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Database: nucorja9.rbm
Station: Scrap Yard
Route No. 1: SCRAP YARD

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
SHREDDER - SHREDDER	(19-Jan-22)	
	OVERALL LEVEL	1K-20KHz
MOH - Motor Outboard Horizontal	.197 In/Sec	.094 G-s
MOV - MOTOR OUTBOARD VERTICAL	.044 In/Sec	.155 G-s
MIV - Motor Inboard Vertical	.051 In/Sec	.100 G-s
MIH - Motor Inboard Horizontal	.175 In/Sec	.222 G-s
MIA - Motor Inboard Axial	.074 In/Sec	.258 G-s
CYCLONE - CYCLONE	(19-Jan-22)	
	OVERALL LEVEL	1K-20KHz
MOH - Motor Outboard Horizontal	.122 In/Sec	.641 G-s
MIH - Motor Inboard Horizontal	.125 In/Sec	.177 G-s
MIA - Motor Inboard Axial	.126 In/Sec	.296 G-s
EIH - Equipment Inboard Horizontal	.128 In/Sec	.211 G-s
EOH - Equipment Outboard Horizontal	.164 In/Sec	1.394 G-s
M3 - MAG DRUM	(19-Jan-22)	
	OVERALL LEVEL	1K-20KHz
MOH - Motor Outboard Horizontal	.068 In/Sec	.204 G-s
MIH - Motor Inboard Horizontal	.066 In/Sec	.106 G-s
MIA - Motor Inboard Axial	.065 In/Sec	.130 G-s
GIH - GEARBOX Inboard Horizontal	.056 In/Sec	.043 G-s
GOH - GEARBOX OUTBOARD HORIZONTAL	.067 In/Sec	.047 G-s
IDB - INBOARD DRUM BEARING	.042 In/Sec	.0058 G-s
ODB - OUTBOARD DRUM BEARING	.064 In/Sec	.0016 G-s
NUMBER 11 - NUMBER 11	(19-Jan-22)	
	OVERALL LEVEL	1K-20KHz
MOH - Motor Outboard Horizontal	.936 In/Sec	.293 G-s
MIH - Motor Inboard Horizontal	.752 In/Sec	.315 G-s
MIA - Motor Inboard Axial	.348 In/Sec	.092 G-s
EIH - Equipment Inboard Horizontal	.245 In/Sec	1.095 G-s
EIA - Equipment Inboard Axial	.328 In/Sec	.683 G-s
EOH - Equipment Outboard Horizontal	.205 In/Sec	.172 G-s

SAIRCOMP - NEW SEPARATOR SOUTH AIR COMP (19-Jan-22)

	OVERALL LEVEL	1K-20KHz
MOH - Motor Outboard Horizontal	.133 In/Sec	.089 G-s
MIH - Motor Inboard Horizontal	.092 In/Sec	.737 G-s
MIA - Motor Inboard Axial	.124 In/Sec	1.508 G-s
EIH - Equipment Inboard Horizontal	.088 In/Sec	.514 G-s
EIA - Equipment Inboard Axial	.069 In/Sec	.613 G-s
EOH - Equipment Outboard Horizontal	.090 In/Sec	.851 G-s

NAIRCOMP - NEW SEPARATOR NORTH AIR COMP (19-Jan-22)

	OVERALL LEVEL	1K-20KHz
MOH - Motor Outboard Horizontal	.136 In/Sec	.188 G-s
MIH - Motor Inboard Horizontal	.082 In/Sec	.621 G-s
MIA - Motor Inboard Axial	.102 In/Sec	1.057 G-s
EIH - Equipment Inboard Horizontal	.085 In/Sec	.551 G-s
EIA - Equipment Inboard Axial	.092 In/Sec	1.040 G-s
EOH - Equipment Outboard Horizontal	.102 In/Sec	.523 G-s

Clarification Of Vibration Units:

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