7030 Ryburn Dr. Millington, TN Phone: (901) 873-5300 Fax: (901) 873-5301 www.gohispeed.com

March 4, 2025

NUCOR Melt Shop

Subject: January 2025 vibration survey

Below is a summary report for the Melt Shop monthly vibration survey that was performed on 02/25/25. 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.

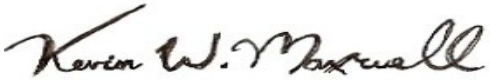
Class II: Defect (s) present that may cause problem in long term (2-6 months). Repair during normal maintenance scheduling. Continue to monitor.

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

As always, it has been a pleasure to serve NUCOR Steel Flowood-Jackson, MS. If there are any comments or questions, do not hesitate to contact us.

Sincerely,



ISO Certified Vibration Analyst, Category III

Cell: 901-486-4565

Email: kwilliam@gohispeed.com

Defects

Middle Caster Mold Water Pump

Pump was down this survey; however, the following still applies: Vibration data shows issues in the pump. Data suggests looseness/wear of the pump bearings/fits. Impeller and other pump internals may also have wear. The pump will likely need attention soon. Rated as a **CLASS II** defect.

East Booster Pump

Motor vibration data indicates defects are present in the motor bearings. Inspect motor as scheduling allows. Rated as a **CLASS III** defect.

Middle Caster Spray Water Pump (2 from the left)

Top motor data shows non-synchronous peaks present that are indicative of bearing faults. Inspect motor bearing soon. Rated as a **CLASS II** defect.

Cooling Tower #4 Supply Pump

Pump was down this survey; however, the following still applies: Pump data shows some signs of bearing defects/wear in the ODE pump bearing. Inspect pump as scheduling allows. Rated as a **CLASS III** defect.

Cooling Tower #5 Supply Pump

Pump has some elevated 1 x rpm axial vibration. For now, it is recommended to inspect couplings, alignment, and all pump fasteners as scheduling allows. Rated as a **CLASS II** defect.

Cooling Tower #6 Supply Pump

The pump vibration data still indicates that there is bearing wear, and possibly cavitation in the pump. Inspect ODE pump bearing. Ensure the pump has no inlet restrictions and is operating in the correct part of the curve. Impeller may have excessive wear. Rated as a **CLASS II** defect.

Spray Chamber Exhaust Fan

Could not access fan this survey, however the following likely still applies: Motor and fan both have high vibration again this survey. Belts could be slipping which is allowing the fan to operate at speeds near a resonance which causing high 1 x fan rpm vibration in the unit. High 1 x rpm vibration could also be structural issue and or fan imbalance. Inspect all motor base mounts/fasteners. Inspect fan for build-up and inspect belt tension soon. Rated as a **CLASS III** defect.

Abbreviated Last Measurement Summary

****

Database: nucorja9.rbm
Station: Melt Shop

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
WCMWP - WEST CASTER MOLD WATER PUMP (25-Feb-25)		
	OVERALL LEVEL	1K-20KHz
MOH	.075 In/Sec	.172 G-s
MIH	.076 In/Sec	.292 G-s
MIA	.070 In/Sec	.294 G-s
PIA	.333 In/Sec	.258 G-s
PIH	.136 In/Sec	.535 G-s
POH	.200 In/Sec	.503 G-s
ECMWP - EAST CASTER MOLD WATER PUMP (25-Feb-25)		
	OVERALL LEVEL	1K-20KHz
MOH	.051 In/Sec	.279 G-s
MIH	.069 In/Sec	.445 G-s
MIA	.298 In/Sec	.371 G-s
PIA	.308 In/Sec	2.117 G-s
PIH	.158 In/Sec	1.910 G-s
POH	.178 In/Sec	1.905 G-s
POV	.181 In/Sec	1.446 G-s
PIV	.250 In/Sec	2.099 G-s
MIV	.427 In/Sec	.678 G-s
MOV	.065 In/Sec	.766 G-s
EBOSTRP - EAST Booster PUMP (25-Feb-25)		
	OVERALL LEVEL	1K-20KHz
MOH	.081 In/Sec	.769 G-s
MIH	.145 In/Sec	2.102 G-s
MIA	.120 In/Sec	1.572 G-s
PIA	.200 In/Sec	.154 G-s
PIH	.129 In/Sec	.171 G-s
POH	.081 In/Sec	.207 G-s
ECSWP 1LFT - EAST CASTER SPRAY WP 1 LEFT (25-Feb-25)		
	OVERALL LEVEL	1K-20KHz
MOH	.095 In/Sec	.200 G-s
MIH	.065 In/Sec	.282 G-s
MIA	.059 In/Sec	.180 G-s
MCSWP 2LFT - MID CASTER SPRAY WP 2 LEFT (25-Feb-25)		
	OVERALL LEVEL	1K-20KHz
MOH	.437 In/Sec	.621 G-s
MIH	.153 In/Sec	.832 G-s
MIA	.118 In/Sec	.466 G-s
MCSWP 3RT - MID CASTER SPRAY WP 3 RIGHT (25-Feb-25)		
	OVERALL LEVEL	1K-20KHz
MOH	.249 In/Sec	.268 G-s
MIH	.117 In/Sec	.630 G-s
MIA	.134 In/Sec	.820 G-s
MSERVOHYDP - MIDDLE SERVO Hyd PUMP (25-Feb-25)		
	OVERALL LEVEL	1K-20KHz
MOH	.219 In/Sec	.250 G-s
MIH	.082 In/Sec	.311 G-s
PIV	.218 In/Sec	.662 G-s
WSERVOHYDP - WEST SERVO Hyd PUMP (25-Feb-25)		
	OVERALL LEVEL	1K-20KHz
MOH	.084 In/Sec	.278 G-s
MIH	.093 In/Sec	.200 G-s
PIV	.245 In/Sec	1.073 G-s

SERVOHRECP - SERVO Hyd RECIRC PUMP (25-Feb-25)

	OVERALL LEVEL	1K-20KHz
MOH	.059 In/Sec	.158 G-s
MIH	.141 In/Sec	.589 G-s
PIV	.274 In/Sec	1.106 G-s

2DEKRECIP - 2ND DECK L&S Hyd RECIRC PUM (25-Feb-25)

	OVERALL LEVEL	1K-20KHz
MOH	.142 In/Sec	.233 G-s
MIH	.120 In/Sec	.319 G-s
PIV	.239 In/Sec	1.552 G-s

M2DECKHYDP - MIDDLE 2ND DECK Hyd PUMP (25-Feb-25)

	OVERALL LEVEL	1K-20KHz
MOH	.129 In/Sec	.080 G-s
MIH	.043 In/Sec	.153 G-s
PIV	1.318 In/Sec	.021 G-s

S2DECKHYDP - SOUTH 2ND DECK Hyd PUMP (25-Feb-25)

	OVERALL LEVEL	1K-20KHz
MOH	.098 In/Sec	.272 G-s
MIH	.088 In/Sec	.520 G-s
PIV	.504 In/Sec	2.064 G-s

1SUPLYP - #1 Supply Pump (25-Feb-25)

	OVERALL LEVEL	1K-20KHz
MOH	.089 In/Sec	.234 G-s
MIH	.137 In/Sec	.152 G-s
MIA	.173 In/Sec	.119 G-s
PIA	.471 In/Sec	.686 G-s
PIH	.344 In/Sec	.915 G-s
POH	.229 In/Sec	.940 G-s

2SUPLYP - #2 Supply Pump (25-Feb-25)

	OVERALL LEVEL	1K-20KHz
MOH	.064 In/Sec	.636 G-s
MIH	.061 In/Sec	.578 G-s
MIA	.068 In/Sec	.296 G-s
PIA	.214 In/Sec	.323 G-s
PIH	.233 In/Sec	.533 G-s
POH	.222 In/Sec	1.076 G-s

3SUPLYP - #3 Supply Pump (25-Feb-25)

	OVERALL LEVEL	1K-20KHz
MOH	.066 In/Sec	.840 G-s
MIH	.072 In/Sec	.901 G-s
MIA	.076 In/Sec	.705 G-s
PIA	.202 In/Sec	.372 G-s
PIH	.173 In/Sec	.475 G-s
POH	.206 In/Sec	.919 G-s

5SUPLYP - #5 Supply Pump (25-Feb-25)

	OVERALL LEVEL	1K-20KHz
MOH	.051 In/Sec	.604 G-s
MIH	.053 In/Sec	.602 G-s
MIA	.094 In/Sec	.323 G-s
PIA	.293 In/Sec	.243 G-s
PIH	.189 In/Sec	.637 G-s
POH	.254 In/Sec	1.329 G-s

6SUPLYP - #6 Supply Pump (25-Feb-25)

	OVERALL LEVEL	1K-20KHz
MOH	.075 In/Sec	.271 G-s
MIH	.075 In/Sec	.193 G-s
MIA	.080 In/Sec	.142 G-s
PIA	.132 In/Sec	.269 G-s
PIH	.162 In/Sec	.236 G-s
POH	.186 In/Sec	1.002 G-s

		OVERALL LEVEL	1K-20KHz
CBRA	- CASTER BAGHOUSE REVERSE AIR (25-Feb-25)		
	MOH	.054 In/Sec	.159 G-s
	MIH	.062 In/Sec	.159 G-s
	MIA	.062 In/Sec	.151 G-s
	FIH	.026 In/Sec	.249 G-s
	FOH	.058 In/Sec	.078 G-s
CBID	- CASTER BAGHOUSE ID FAN (25-Feb-25)		
	MOH	.039 In/Sec	.085 G-s
	MOV	.020 In/Sec	.100 G-s
	MIH	.034 In/Sec	.091 G-s
	MIV	.033 In/Sec	.168 G-s
	MIA	.020 In/Sec	.197 G-s
	FIA	.042 In/Sec	.523 G-s
	FIH	.058 In/Sec	.728 G-s
	FIV	.040 In/Sec	.549 G-s
	FOH	.067 In/Sec	.682 G-s
	FOV	.028 In/Sec	.690 G-s
	FOA	.076 In/Sec	.439 G-s
FRAF	- Furnace REVERSE AIR Fan (25-Feb-25)		
	MOH	.044 In/Sec	.245 G-s
	MIH	.052 In/Sec	.564 G-s
	MIA	.033 In/Sec	.301 G-s
	FIA	.118 In/Sec	.421 G-s
	FIH	.047 In/Sec	.418 G-s
	FOH	.040 In/Sec	.407 G-s
EFBHF	- East Furnace Bag House Fan (25-Feb-25)		
	MOH	.075 In/Sec	.667 G-s
	MIH	.081 In/Sec	.524 G-s
	MIA	.035 In/Sec	.465 G-s
	FIA	.084 In/Sec	.955 G-s
	FIH	.126 In/Sec	.896 G-s
	FOH	.105 In/Sec	.997 G-s
WFBHF	- WEST Furnace Bag House Fan (25-Feb-25)		
	MOH	.084 In/Sec	.286 G-s
	MIH	.103 In/Sec	.206 G-s
	MIA	.050 In/Sec	.560 G-s
	FIA	.096 In/Sec	1.028 G-s
	FIH	.127 In/Sec	.469 G-s
	FOH	.091 In/Sec	1.008 G-s

Clarification Of Vibration Units:

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