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August 11, 2025

NUCOR Melt Shop

Subject: July 2025 vibration survey

Below is a summary report for the Melt Shop monthly vibration survey that was performed on 08/07/25. 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.

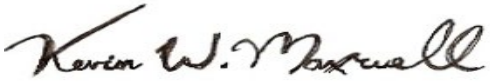
Class II: Defect (s) present that may cause problem in long term (2-6 months). Repair during normal maintenance scheduling. Continue to monitor.

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,



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Defects

Middle Caster Mold Water Pump

Pump was down this survey; however, the following likely 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 Caster Mold Water Pump

Pump has some vibrations associated with vane pass. This could be an issue with the impeller. We are monitoring this closely. Rated as a **CLASS I** defect.

East Booster Pump

Pump was down this survey; however, the following likely still applies: Motor vibration data indicates defects are present in the motor bearings. Inspect motor as scheduling allows. Rated as a **CLASS III** defect.

Cooling Tower #1 Supply Pump

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

Cooling Tower #4 Supply Pump

Pump was down this survey; however, the following likely 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 increased 1 x rpm axial vibration. The pump front right foot is loose to the base. The lock washer appears to have broken on the fastener. It is highly recommended to inspect all pump fasteners, couplings, alignment, and as soon as practical Overall vibration is over 1.5 ips-pk. Rated as a **CLASS III** 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.

Caster Baghouse ID Fan

Fan ODE bearing is starting to show increased acceleration and also some low amplitude non-synchronous peaks have appeared in spectra. These are good indications of early stage bearing wear. For now, Check lube at next downtime. We are monitoring this closely. Rated as a **CLASS I** defect.

Abbreviated Last Measurement Summary

Database: nucorja9.rbm
Station: Melt Shop

MEASUREMENT POINT		OVERALL LEVEL	HFD / VHFD
WCMWP	- WEST CASTER MOLD WATER PUMP	(07-Aug-25)	
		OVERALL LEVEL	1K-20KHz
MOH		.119 In/Sec	.275 G-s
MIH		.084 In/Sec	.381 G-s
MIA		.093 In/Sec	.237 G-s
PIA		.295 In/Sec	1.041 G-s
PIH		.192 In/Sec	.936 G-s
POH		.270 In/Sec	.784 G-s
ECMWP	- EAST CASTER MOLD WATER PUMP	(07-Aug-25)	
		OVERALL LEVEL	1K-20KHz
MOH		.178 In/Sec	.666 G-s
MIH		.132 In/Sec	.850 G-s
MIA		.104 In/Sec	.702 G-s
PIA		.289 In/Sec	4.383 G-s
PIH		.172 In/Sec	2.216 G-s
POH		.146 In/Sec	2.443 G-s
WBOSTRP	- WEST Booster PUMP	(07-Aug-25)	
		OVERALL LEVEL	1K-20KHz
MOH		.085 In/Sec	.706 G-s
MIH		.053 In/Sec	.471 G-s
MIA		.053 In/Sec	.327 G-s
PIA		.148 In/Sec	2.587 G-s
PIH		.146 In/Sec	1.781 G-s
POH		.203 In/Sec	2.272 G-s
EBOSTRP	- EAST Booster PUMP	(17-Apr-25)	
		OVERALL LEVEL	1K-20KHz
MOH		.136 In/Sec	1.103 G-s
MIH		.206 In/Sec	2.826 G-s
MIA		.169 In/Sec	1.006 G-s
PIA		.183 In/Sec	.126 G-s
PIH		.167 In/Sec	.211 G-s
POH		.052 In/Sec	.234 G-s
ECSWP 1LFT	- EAST CASTER SPRAY WP 1 LEFT	(07-Aug-25)	
		OVERALL LEVEL	1K-20KHz
MOH		.078 In/Sec	.243 G-s
MIH		.060 In/Sec	.440 G-s
MIA		.103 In/Sec	.133 G-s
MCSWP 2LFT	- MID CASTER SPRAY WP 2 LEFT	(07-Aug-25)	
		OVERALL LEVEL	1K-20KHz
MOH		.114 In/Sec	.387 G-s
MIH		.077 In/Sec	1.138 G-s
MIA		.081 In/Sec	.512 G-s
MCSWP 3RT	- MID CASTER SPRAY WP 3 RIGHT	(07-Aug-25)	
		OVERALL LEVEL	1K-20KHz
MOH		.087 In/Sec	.327 G-s
MIH		.073 In/Sec	.379 G-s
MIA		.063 In/Sec	.318 G-s
WCSWP 4RT	- WEST CASTER SPRAY WP 4 RIGH	(07-Aug-25)	
		OVERALL LEVEL	1K-20KHz
MOH		.262 In/Sec	.578 G-s
MIH		.145 In/Sec	.727 G-s

MIA		.111 In/Sec	.613 G-s

ESERVOHYDP - EAST SERVO Hyd PUMP (08-Aug-25)

	OVERALL LEVEL	1K-20KHz
MOH	.102 In/Sec	.810 G-s
MIH	.123 In/Sec	1.960 G-s
PIV	.393 In/Sec	1.842 G-s

WSERVOHYDP - WEST SERVO Hyd PUMP (08-Aug-25)

	OVERALL LEVEL	1K-20KHz
MOH	.110 In/Sec	.242 G-s
MIH	.118 In/Sec	.413 G-s
PIV	.130 In/Sec	.891 G-s

SERVOHRECP - SERVO Hyd RECIRC PUMP (08-Aug-25)

	OVERALL LEVEL	1K-20KHz
MOH	.120 In/Sec	1.167 G-s
MIH	.108 In/Sec	.962 G-s
PIV	.195 In/Sec	2.160 G-s

N2DECKHYDP - North 2ND DECK Hyd PUMP (08-Aug-25)

	OVERALL LEVEL	1K-20KHz
MOH	.299 In/Sec	.629 G-s
MIH	.282 In/Sec	.768 G-s
PIV	.320 In/Sec	4.854 G-s

2DEKRECIP - 2ND DECK L&S Hyd RECIRC PUM (08-Aug-25)

	OVERALL LEVEL	1K-20KHz
MOH	.108 In/Sec	.230 G-s
MIH	.097 In/Sec	.407 G-s
PIV	.270 In/Sec	2.548 G-s

S2DECKHYDP - SOUTH 2ND DECK Hyd PUMP (08-Aug-25)

	OVERALL LEVEL	1K-20KHz
MOH	.226 In/Sec	.931 G-s
MIH	.050 In/Sec	1.633 G-s
PIV	.588 In/Sec	4.432 G-s

1SUPLYP - #1 Supply Pump (08-Aug-25)

	OVERALL LEVEL	1K-20KHz
MOH	.134 In/Sec	.298 G-s
MIH	.232 In/Sec	.484 G-s
MIA	.212 In/Sec	.305 G-s
PIA	.761 In/Sec	2.020 G-s
PIH	.493 In/Sec	.940 G-s
POH	.289 In/Sec	1.340 G-s

2SUPLYP - #2 Supply Pump (08-Aug-25)

	OVERALL LEVEL	1K-20KHz
MOH	.098 In/Sec	1.007 G-s
MIH	.083 In/Sec	.907 G-s
MIA	.138 In/Sec	.653 G-s
PIA	.320 In/Sec	1.076 G-s
PIH	.257 In/Sec	.695 G-s
POH	.312 In/Sec	2.567 G-s
* POV	.230 In/Sec	2.567 G-s

3SUPLYP - #3 Supply Pump (08-Aug-25)

	OVERALL LEVEL	1K-20KHz
MOH	.066 In/Sec	1.689 G-s
MIH	.066 In/Sec	1.282 G-s
MIA	.063 In/Sec	.781 G-s
PIA	.175 In/Sec	.659 G-s
PIH	.128 In/Sec	.589 G-s
POH	.183 In/Sec	.743 G-s

5SUPLYP - #5 Supply Pump (08-Aug-25)

	OVERALL LEVEL	1K-20KHz
MOH	.073 In/Sec	1.118 G-s
MIH	.133 In/Sec	1.112 G-s
MIA	.140 In/Sec	.338 G-s
PIA	1.509 In/Sec	2.241 G-s
PIH	.608 In/Sec	1.023 G-s
POH	.593 In/Sec	1.442 G-s

6SUPLYP - #6 Supply Pump (08-Aug-25)

	OVERALL LEVEL	1K-20KHz
MOH	.271 In/Sec	.286 G-s
MIH	.373 In/Sec	.228 G-s
MIA	.344 In/Sec	.127 G-s
PIA	.225 In/Sec	1.047 G-s
PIH	.253 In/Sec	1.037 G-s
POH	.296 In/Sec	1.428 G-s
* POV	.132 In/Sec	1.295 G-s

CBRA - CASTER BAGHOUSE REVERSE AIR (08-Aug-25)

	OVERALL LEVEL	1K-20KHz
MOH	.024 In/Sec	.148 G-s
MIH	.028 In/Sec	.310 G-s
MIA	.021 In/Sec	.156 G-s
FIH	.023 In/Sec	.318 G-s
FOH	.037 In/Sec	.192 G-s
FOV	.039 In/Sec	.072 G-s
FIV	.048 In/Sec	.076 G-s

CBID - CASTER BAGHOUSE ID FAN (08-Aug-25)

	OVERALL LEVEL	1K-20KHz
MOH	.036 In/Sec	.088 G-s
MOV	.028 In/Sec	.105 G-s
MIH	.035 In/Sec	.228 G-s
MIV	.032 In/Sec	.235 G-s
MIA	.022 In/Sec	.109 G-s
FIA	.031 In/Sec	1.048 G-s
FIH	.060 In/Sec	1.149 G-s
FIV	.032 In/Sec	.618 G-s
FOH	.073 In/Sec	2.713 G-s
FOV	.024 In/Sec	3.809 G-s
FOA	.073 In/Sec	1.997 G-s

FRAF - Furnace REVERSE AIR Fan (08-Aug-25)

	OVERALL LEVEL	1K-20KHz
MOH	.039 In/Sec	.234 G-s
MIH	.051 In/Sec	1.938 G-s
MIA	.020 In/Sec	1.478 G-s
FIA	.044 In/Sec	.160 G-s
FIH	.038 In/Sec	.259 G-s
FOH	.032 In/Sec	.297 G-s
FOV	.023 In/Sec	.368 G-s
FIV	.062 In/Sec	.787 G-s

EFBHF - East Furnace Bag House Fan (08-Aug-25)

	OVERALL LEVEL	1K-20KHz
MOH	.089 In/Sec	.778 G-s
MIH	.086 In/Sec	.922 G-s
MIA	.034 In/Sec	.640 G-s
FIA	.121 In/Sec	1.254 G-s
FIH	.136 In/Sec	1.448 G-s
FOH	.125 In/Sec	1.233 G-s
FIV	.082 In/Sec	.888 G-s

WFBHF - WEST Furnace Bag House Fan (08-Aug-25)

	OVERALL LEVEL	1K-20KHz
MOH	.197 In/Sec	.430 G-s
MIH	.243 In/Sec	.748 G-s
MIA	.073 In/Sec	.237 G-s
FIA	.118 In/Sec	.643 G-s

FIH	.162	In/Sec	1.095 G-s
FOH	.110	In/Sec	.940 G-s
FOV	.071	In/Sec	.451 G-s
FIV	.083	In/Sec	1.301 G-s

Clarification Of Vibration Units:

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