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July 1, 2022

NUCOR Melt Shop Subject: June 2022 vibration survey

Below is a summary report for the Melt Shop monthly vibration survey that was performed on 6/29/22. 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.

<u>Class I:</u> Defect is present, but effect on reliability is not clear; no immediate action is required. Continue to normally monitor.

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

<u>Class III</u>: 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.

<u>Class IV</u>; 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 Steel Flowood-Jackson, MS. If there are any comments or questions, do not hesitate to contact us.

Sincerely,

1. Maruell

ISO Certified Vibration Analyst, Category III



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Defects

West Caster Mold Water Pump

High 2 x rpm vibration is present in in motor and pump. This indicates angular misalignment. Motor and pump may also have some internal wear. Perform a precision alignment with less than .003" offset and angularity (rim and face). Ensure there is no soft foot present in the motor. Rated as a **CLASS II** defect.

East Caster Mold Water Pump

Pump is still showing some signs of internal wear. Coupling is also showing signs of wear likely due to misalignment. Perform a precision alignment with less than .002" offset and angularity. Ensure there is no soft foot present. Rated as a **CLASS II** defect.

Second Deck Hyd. Pumps (North and South)

Both pumps had higher than normal high frequency vibration. This may be process related. Please note that caster was down during this time. Inspect filters ensuring pumps have good flow. Rated as **CLASS II** defect.

Cooling Tower #2 Supply Pump

Motor data is showing signs of motor bearing issues. The pump appears to have cavitation which is causing a high noise floor in the spectrum. This is also making the ODE pump bearing have high acceleration. This could also be a bearing issues, but the noise floor is masking the data somewhat. Pump impeller or other pump internals may also be worn which could be causing this vibration. Pump needs to be inspected as time allows. Rated as a **CLASS II** defect.

Cooling Tower #3 Supply Pump

Pump was down this survey; however, the following still applies: The pump appears to have cavitation which is causing a high noise floor in the spectrum. This is also making the ODE pump bearing have high acceleration. This could also be a bearing issues, but the noise floor is masking the data somewhat. Pump impeller or other pump internals could also be worn which could be causing this vibration. Pump needs to be inspected as time allows. Rated as a **CLASS II** defect.

Cooling Tower Pump #5

Pump was recently worked; however, data still shows high 1 x rpm axial vibration in the pump. Pump impeller/shaft could be out of balance or pump has cocked bearing or some other internal misalignment. Inspect as time allows. Rated as a **CLASS II** defect.

Cooling Tower #6 Supply Pump

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

Caster ID Baghouse Fan

Newly installed motor has some higher-than-normal vibration. Motor inboard vertical waveform data shows an impacting or knock type vibration. We will monitor this very closely. Also, 1 x rpm vibration is staring to increase some in the fan. Overall amplitude is around .2 in the FIH.. Previous data showed fan inboard axial spectrum to have several sidebands peaks around 2 x outer race defect frequency. This has since dissipated; however, we are still monitoring this closely as well. Rated as a **CLASS I** defect for now.

Furnace Reverse Air Fan

The thrusting and impacting that was seen a couple of surveys ago was not present this month. It is unclear if the process flow was influencing this. Fan access door should be opened and inspected for build up at the bottom of the housing. Rated as a **CLASS I** defect for now.

Spray Chamber Exhaust Fan

Motor and fan have high fan speed vibration. Outboard fan bearing is showing signs of defects/wear. Inspect fan bearings especially the ODE fan bearing for defects and proper lubrication as soon as practical. This unit is very likely operating near a critical speed and is resonant which is likely influencing the high vibration in the motor and fan. Fan also has some imbalance likely caused by build-up. Because of the high vibration amplitudes, this is rated as a **CLASS III** defect.

South Caster Oscillator

This unit has visible axial movement of the input of the gear drive. You can see the movement at the coupling gap. Data of the gear drive does show some gear noise and this unit seems to be knocking worse than the other two drives. Inspect unit as scheduling allows. Rated as a **CLASS II** defect.

> Database: nucorja9.rbm Station: Melt Shop Route No. 1: MELT SHOP

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
WCMWP - WEST CASTER MOLD WATER DIMP	(29-Jun-22)	
WEIMP WEIDT CADTER MOLD WATER FOMP	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORTZONTAL		526 G-s
MTH - MOTOR INBOARD HORIZONTAL	183 Tn/Sec	790 G-s
MTA - MOTOR INBOARD AXIAI.	146 Tn/Sec	774 G-s
PIA - PUMP INBOARD AXIAL	.239 In/Sec	1.447 G-s
PIH - PUMP INBOARD HORIZONTAL	.150 In/Sec	1.207 G-s
POH - PUMP OUTBOARD HORIZONTAL	.173 In/Sec	1.210 G-s
MCMWP - MID CASTER MOLD WATER PUMP	(29-Jun-22)	
	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.107 In/Sec	.523 G-s
MIH - MOTOR INBOARD HORIZONTAL	.108 In/Sec	.430 G-s
MIA - MOTOR INBOARD AXIAL	.147 In/Sec	.432 G-s
PIA - PUMP INBOARD AXIAL	.203 In/Sec	.757 G-s
PIH - PUMP INBOARD HORIZONTAL	.215 In/Sec	1.081 G-s
POH - PUMP OUTBOARD HORIZONTAL	.126 In/Sec	1.136 G-s
WBOSTRP - WEST Booster PUMP	(29-Jun-22)	
	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.044 In/Sec	.175 G-s
MIH - MOTOR INBOARD HORIZONTAL	.052 In/Sec	.252 G-s
MIA - MOTOR INBOARD AXIAL	.035 In/Sec	.275 G-s
PIA - PUMP INBOARD AXIAL	.092 In/Sec	.488 G-s
PIH - PUMP INBOARD HORIZONTAL	.132 In/Sec	.537 G-s
POH - PUMP OUTBOARD HORIZONTAL	.189 In/Sec	1.498 G-s
ECSWP 11FT - EAST CASTER SPRAY WP 1 LEFT	(29-Jun-22)	
	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.104 In/Sec	.218 G-s
MIH - MOTOR INBOARD HORIZONTAL	.072 In/Sec	.277 G-s
MIA - MOTOR INBOARD AXIAL	.093 In/Sec	.153 G-s
	(00 - 00)	
MCSWP 2LFT - MID CASTER SPRAY WP 2 LEFT	(29-Jun-22)	1
	OVERALL LEVEL	IK-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.124 In/Sec	.282 G-s
MIH - MOTOR INBOARD HORIZONTAL	.075 In/Sec	.562 G-s

MIA - MOTOR INBOARD AXIAL	.107 In/Sec	.199 G-s
WCSWP 4RT - WEST CASTER SPRAY WP 4 RIGH	(29-Jun-22)	
	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.138 In/Sec	.338 G-s
MIH - MOTOR INBOARD HORIZONTAL	.102 In/Sec	.510 G-s
MIA - MOTOR INBOARD AXIAL	.093 In/Sec	.309 G-s
ESERVOHYDP - EAST SERVO Hyd PUMP	(29-Jun-22)	
-	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.018 In/Sec	.134 G-s
MIH - MOTOR INBOARD HORIZONTAL	.056 In/Sec	.115 G-s
PIV - PUMP INBOARD VERTICAL	.123 In/Sec	.353 G-s
MSERVOHYDP - MIDDLE SERVO Hyd PUMP	(29-Jun-22)	
	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.208 In/Sec	.283 G-s
MIH - MOTOR INBOARD HORIZONTAL	.062 In/Sec	.229 G-s
PIV - PUMP INBOARD VERTICAL	.198 In/Sec	.678 G-s
SERVOHRECP - SERVO Hyd RECIRC PUMP	(29-Jun-22)	
-	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.070 In/Sec	.028 G-s
MIH - MOTOR INBOARD HORIZONTAL	.059 In/Sec	.414 G-s
PIV - PUMP INBOARD VERTICAL	.157 In/Sec	1.012 G-s
N2DECKHYDP - North 2ND DECK Hyd PUMP	(29-Jun-22)	
	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.068 In/Sec	.969 G-s
MIH - MOTOR INBOARD HORIZONTAL	.144 In/Sec	1.506 G-s
PIV - PUMP INBOARD VERTICAL	.438 In/Sec	8.562 G-s
2DEKRECIP - 2ND DECK L&S Hyd RECIRC PUM	(29-Jun-22)	
	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.129 In/Sec	.478 G-s
MIH - MOTOR INBOARD HORIZONTAL	.123 In/Sec	1.405 G-s
PIV - PUMP INBOARD VERTICAL	.3/4 IN/Sec	4.951 G-S
SZDECKHYDP - SOUTH 2ND DECK Hyd PUMP	$(29 - J_{11} - 22)$	
SEPICIALIST SCOTA 2ND SIGN AYA TOM	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.166 In/Sec	.593 G-s
MIH - MOTOR INBOARD HORIZONTAL	.150 In/Sec	.621 G-s
PIV - PUMP INBOARD VERTICAL	.338 In/Sec	3.169 G-s
1SUPLYP - #1 Supply Pump	(29-Jun-22)	
	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.047 In/Sec	.158 G-s
MIH – MOTOR INBOARD HORIZONTAL		
	.064 In/Sec	.136 G-s
MIA - MOTOR INBOARD AXIAL	.064 In/Sec .066 In/Sec	.136 G-s .094 G-s
MIA - MOTOR INBOARD AXIAL PIA - PUMP INBOARD AXIAL	.064 In/Sec .066 In/Sec .230 In/Sec	.136 G-s .094 G-s .133 G-s
MIA - MOTOR INBOARD AXIAL PIA - PUMP INBOARD AXIAL PIH - PUMP INBOARD HORIZONTAL POH - DUMP OUTBOARD HORIZONTAL	.064 In/Sec .066 In/Sec .230 In/Sec .176 In/Sec	.136 G-s .094 G-s .133 G-s .396 G-s
MIA - MOTOR INBOARD AXIAL PIA - PUMP INBOARD AXIAL PIH - PUMP INBOARD HORIZONTAL POH - PUMP OUTBOARD HORIZONTAL	.064 In/Sec .066 In/Sec .230 In/Sec .176 In/Sec .179 In/Sec	.136 G-s .094 G-s .133 G-s .396 G-s .535 G-s
MIA - MOTOR INBOARD AXIAL PIA - PUMP INBOARD AXIAL PIH - PUMP INBOARD HORIZONTAL POH - PUMP OUTBOARD HORIZONTAL 2SUPLYP - #2 Supply Pump	.064 In/Sec .066 In/Sec .230 In/Sec .176 In/Sec .179 In/Sec (29-Jun-22)	.136 G-s .094 G-s .133 G-s .396 G-s .535 G-s
MIA - MOTOR INBOARD AXIAL PIA - PUMP INBOARD AXIAL PIH - PUMP INBOARD HORIZONTAL POH - PUMP OUTBOARD HORIZONTAL 2SUPLYP - #2 Supply Pump	.064 In/Sec .066 In/Sec .230 In/Sec .176 In/Sec .179 In/Sec (29-Jun-22) OVERALL LEVEL	.136 G-s .094 G-s .133 G-s .396 G-s .535 G-s
MIA - MOTOR INBOARD AXIAL PIA - PUMP INBOARD AXIAL PIH - PUMP INBOARD HORIZONTAL POH - PUMP OUTBOARD HORIZONTAL 2SUPLYP - #2 Supply Pump MOH - MOTOR OUTBOARD HORIZONTAL	.064 In/Sec .066 In/Sec .230 In/Sec .176 In/Sec .179 In/Sec (29-Jun-22) OVERALL LEVEL .033 In/Sec	.136 G-s .094 G-s .133 G-s .396 G-s .535 G-s 1K-20KHz .355 G-s
MIA - MOTOR INBOARD AXIAL PIA - PUMP INBOARD AXIAL PIH - PUMP INBOARD HORIZONTAL POH - PUMP OUTBOARD HORIZONTAL 2SUPLYP - #2 Supply Pump MOH - MOTOR OUTBOARD HORIZONTAL MIH - MOTOR INBOARD HORIZONTAL MIH - MOTOR INBOARD HORIZONTAL	.064 In/Sec .066 In/Sec .230 In/Sec .176 In/Sec .179 In/Sec (29-Jun-22) OVERALL LEVEL .033 In/Sec .059 In/Sec	.136 G-s .094 G-s .133 G-s .396 G-s .535 G-s 1K-20KHz .355 G-s 1.318 G-s
MIA - MOTOR INBOARD AXIAL PIA - PUMP INBOARD AXIAL PIH - PUMP INBOARD HORIZONTAL POH - PUMP OUTBOARD HORIZONTAL 2SUPLYP - #2 Supply Pump MOH - MOTOR OUTBOARD HORIZONTAL MIH - MOTOR INBOARD HORIZONTAL MIA - MOTOR INBOARD AXIAL PIA - PIMP INBOARD AXIAL	.064 In/Sec .066 In/Sec .230 In/Sec .176 In/Sec .179 In/Sec (29-Jun-22) OVERALL LEVEL .033 In/Sec .059 In/Sec .049 In/Sec	.136 G-s .094 G-s .133 G-s .396 G-s .535 G-s 1K-20KHz .355 G-s 1.318 G-s .825 G-s
MIA - MOTOR INBOARD AXIAL PIA - PUMP INBOARD AXIAL PIH - PUMP INBOARD HORIZONTAL POH - PUMP OUTBOARD HORIZONTAL 2SUPLYP - #2 Supply Pump MOH - MOTOR OUTBOARD HORIZONTAL MIH - MOTOR INBOARD HORIZONTAL MIA - MOTOR INBOARD AXIAL PIA - PUMP INBOARD AXIAL PIH - PUMP INBOARD HORIZONTAL	.064 In/Sec .066 In/Sec .230 In/Sec .176 In/Sec .179 In/Sec (29-Jun-22) OVERALL LEVEL .033 In/Sec .059 In/Sec .049 In/Sec .215 In/Sec	.136 G-s .094 G-s .133 G-s .396 G-s .535 G-s 1.318 G-s .825 G-s .561 G-s
MIA - MOTOR INBOARD AXIAL PIA - PUMP INBOARD AXIAL PIH - PUMP INBOARD HORIZONTAL POH - PUMP OUTBOARD HORIZONTAL 2SUPLYP - #2 Supply Pump MOH - MOTOR OUTBOARD HORIZONTAL MIH - MOTOR INBOARD HORIZONTAL MIA - MOTOR INBOARD AXIAL PIA - PUMP INBOARD AXIAL PIH - PUMP INBOARD HORIZONTAL POH - PUMP OUTBOARD HORIZONTAL	.064 In/Sec .066 In/Sec .230 In/Sec .176 In/Sec .179 In/Sec (29-Jun-22) OVERALL LEVEL .033 In/Sec .059 In/Sec .049 In/Sec .215 In/Sec .180 In/Sec .197 In/Sec	.136 G-s .094 G-s .133 G-s .396 G-s .535 G-s 1K-20KHz .355 G-s 1.318 G-s .825 G-s .561 G-s .580 G-s 1.413 G-s
MIA - MOTOR INBOARD AXIAL PIA - PUMP INBOARD AXIAL PIH - PUMP INBOARD HORIZONTAL POH - PUMP OUTBOARD HORIZONTAL 2SUPLYP - #2 Supply Pump MOH - MOTOR OUTBOARD HORIZONTAL MIH - MOTOR INBOARD HORIZONTAL MIA - MOTOR INBOARD AXIAL PIA - PUMP INBOARD AXIAL PIH - PUMP INBOARD HORIZONTAL POH - FUMP OUTBOARD HORIZONTAL	.064 In/Sec .066 In/Sec .230 In/Sec .176 In/Sec .179 In/Sec (29-Jun-22) OVERALL LEVEL .033 In/Sec .059 In/Sec .049 In/Sec .180 In/Sec .197 In/Sec	.136 G-s .094 G-s .133 G-s .396 G-s .535 G-s 1.318 G-s .825 G-s .561 G-s .580 G-s 1.413 G-s
MIA - MOTOR INBOARD AXIAL PIA - PUMP INBOARD AXIAL PIH - PUMP INBOARD HORIZONTAL POH - PUMP OUTBOARD HORIZONTAL 2SUPLYP - #2 Supply Pump MOH - MOTOR OUTBOARD HORIZONTAL MIH - MOTOR INBOARD HORIZONTAL MIA - MOTOR INBOARD HORIZONTAL PIA - PUMP INBOARD AXIAL PIH - PUMP INBOARD HORIZONTAL POH - PUMP OUTBOARD HORIZONTAL SSUPLYP - #5 Supply Pump	.064 In/Sec .066 In/Sec .230 In/Sec .176 In/Sec .179 In/Sec (29-Jun-22) OVERALL LEVEL .033 In/Sec .059 In/Sec .049 In/Sec .180 In/Sec .197 In/Sec	.136 G-s .094 G-s .133 G-s .396 G-s .535 G-s 1.318 G-s .825 G-s .561 G-s .580 G-s 1.413 G-s
MIA - MOTOR INBOARD AXIAL PIA - PUMP INBOARD AXIAL PIH - PUMP INBOARD HORIZONTAL POH - PUMP OUTBOARD HORIZONTAL 2SUPLYP - #2 Supply Pump MOH - MOTOR OUTBOARD HORIZONTAL MIH - MOTOR INBOARD HORIZONTAL MIA - MOTOR INBOARD HORIZONTAL PIA - PUMP INBOARD AXIAL PIH - PUMP INBOARD HORIZONTAL POH - PUMP OUTBOARD HORIZONTAL SSUPLYP - #5 Supply Pump	.064 In/Sec .066 In/Sec .230 In/Sec .176 In/Sec .179 In/Sec (29-Jun-22) OVERALL LEVEL .033 In/Sec .059 In/Sec .049 In/Sec .180 In/Sec .197 In/Sec (29-Jun-22) OVERALL LEVEL .056 Jp/Sec	.136 G-s .094 G-s .133 G-s .396 G-s .535 G-s 1.318 G-s .825 G-s .561 G-s .580 G-s 1.413 G-s
MIA - MOTOR INBOARD AXIAL PIA - PUMP INBOARD AXIAL PIH - PUMP INBOARD HORIZONTAL POH - PUMP OUTBOARD HORIZONTAL 2SUPLYP - #2 Supply Pump MOH - MOTOR OUTBOARD HORIZONTAL MIH - MOTOR INBOARD HORIZONTAL MIA - MOTOR INBOARD AXIAL PIA - PUMP INBOARD AXIAL PIH - PUMP INBOARD HORIZONTAL POH - PUMP OUTBOARD HORIZONTAL SSUPLYP - #5 Supply Pump MOH - MOTOR OUTBOARD HORIZONTAL MIH - MOTOR OUTBOARD HORIZONTAL	.064 In/Sec .066 In/Sec .230 In/Sec .176 In/Sec .179 In/Sec (29-Jun-22) OVERALL LEVEL .033 In/Sec .059 In/Sec .049 In/Sec .180 In/Sec .197 In/Sec (29-Jun-22) OVERALL LEVEL .056 In/Sec .065 In/Sec	.136 G-s .094 G-s .133 G-s .396 G-s .535 G-s 1.318 G-s .825 G-s .561 G-s .580 G-s 1.413 G-s 1.413 G-s
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MIA - MOTOR INBOARD AXIAL PIA - PUMP INBOARD AXIAL PIH - PUMP INBOARD HORIZONTAL POH - PUMP OUTBOARD HORIZONTAL 2SUPLYP - #2 Supply Pump MOH - MOTOR OUTBOARD HORIZONTAL MIH - MOTOR INBOARD HORIZONTAL MIA - MOTOR INBOARD AXIAL PIA - PUMP INBOARD AXIAL PIH - PUMP INBOARD HORIZONTAL POH - PUMP OUTBOARD HORIZONTAL SSUPLYP - #5 Supply Pump MOH - MOTOR OUTBOARD HORIZONTAL MIH - MOTOR INBOARD HORIZONTAL MIH - MOTOR INBOARD HORIZONTAL MIH - MOTOR INBOARD AXIAL PIA - PUMP INBOARD AXIAL PIA - PUMP INBOARD AXIAL	.064 In/Sec .066 In/Sec .230 In/Sec .176 In/Sec .179 In/Sec (29-Jun-22) OVERALL LEVEL .033 In/Sec .059 In/Sec .049 In/Sec .180 In/Sec .197 In/Sec (29-Jun-22) OVERALL LEVEL .056 In/Sec .065 In/Sec .085 In/Sec	.136 G-s .094 G-s .133 G-s .396 G-s .535 G-s 1.318 G-s .825 G-s .561 G-s .580 G-s 1.413 G-s 1.413 G-s 1.413 G-s 1.413 G-s .594 G-s .272 G-s .689 G-s
MIA - MOTOR INBOARD AXIAL PIA - PUMP INBOARD AXIAL PIH - PUMP INBOARD HORIZONTAL POH - PUMP OUTBOARD HORIZONTAL 2SUPLYP - #2 Supply Pump MOH - MOTOR OUTBOARD HORIZONTAL MIH - MOTOR INBOARD HORIZONTAL MIA - MOTOR INBOARD HORIZONTAL PIA - PUMP INBOARD AXIAL PIH - PUMP INBOARD HORIZONTAL SSUPLYP - #5 Supply Pump MOH - MOTOR OUTBOARD HORIZONTAL SSUPLYP - #5 Supply Pump MOH - MOTOR OUTBOARD HORIZONTAL MIH - MOTOR INBOARD HORIZONTAL MIH - MOTOR INBOARD HORIZONTAL MIH - PUMP INBOARD AXIAL PIA - PUMP INBOARD AXIAL PIA - PUMP INBOARD AXIAL PIH - PUMP INBOARD HORIZONTAL	.064 In/Sec .066 In/Sec .230 In/Sec .176 In/Sec .179 In/Sec (29-Jun-22) OVERALL LEVEL .033 In/Sec .059 In/Sec .049 In/Sec .180 In/Sec .197 In/Sec (29-Jun-22) OVERALL LEVEL .056 In/Sec .065 In/Sec .572 In/Sec .225 In/Sec	.136 G-s .094 G-s .133 G-s .396 G-s .535 G-s 1.318 G-s .825 G-s .561 G-s .580 G-s 1.413 G-s 1.413 G-s 1.413 G-s 1.413 G-s .594 G-s .272 G-s .689 G-s .905 G-s

6SUPLYP	- #6 Supply Pump	(29-Jun-22)	
		OVERALL LEVEL	1K-20KHz
МОН - М	NOTOR OUTBOARD HORIZONTAL	.041 In/Sec	.193 G-s
MIH - M	NOTOR INBOARD HORIZONTAL	.061 In/Sec	.179 G-s
MIA - M	NOTOR INBOARD AXIAL	.066 In/Sec	.124 G-s
PIA - P	UMP INBOARD AXIAL	.165 In/Sec	.435 G-s
PIH - P	PUMP INBOARD HORIZONTAL	.173 In/Sec	.492 G-s
РОН – Р	OMP OUTBOARD HORIZONTAL	.229 In/Sec	1.717 G-s
CDDA	CAGMED DACUALLE DEVEDO		
 CBRA	- CASTER BAGHOUSE REVERS	OVERNIT IEVEL	1K-20KH-
		037 TR/Soc	164 C-S
MTH - M	OTOR INBOARD HORIZONTAL	029 In/Sec	119 G-s
MIA - M	OTOR INBOARD AXIAL	.021 In/Sec	.142 G-s
FIH - F	'AN INBOARD HORIZONTAL	.025 In/Sec	.429 G-s
FOH - F	AN OUTBOARD HORIZONTAL	.033 In/Sec	.136 G-s
 CBID	- CASTER BAGHOUSE ID FAN	(29-Jun-22)	
		OVERALL LEVEL	1K-20KHz
МОН – М	NOTOR OUTBOARD HORIZONTAL	.075 In/Sec	.085 G-s
MOV - M	NOTOR OUTBOARD VERTICAL	.051 In/Sec	.104 G-s
MIH - M	OTOR INBOARD HORIZONTAL	.092 In/Sec	.280 G-s
MIV - M	NOTOR INBOARD VERTICAL	.084 In/Sec	.429 G-s
MIA - M	NOTOR INBOARD AXIAL	.045 In/Sec	.234 G-S
FIA - F	AN INDOARD AXIAL	214 Tp/Sec	1.129 G-S
FIN - F	AN INBOARD HORIZONIAL	128 Tr/Sec	2.370 G-s
т v т т т – нот	AN OUTBOARD HORIZONTAL	183 In/Sec	368 G-s
FOV - F	AN OUTBOARD VERTICAL	.040 In/Sec	.390 G-s
FOA - F	AN OUTBOARD AXIAL	.079 In/Sec	.268 G-s
 FRAF	- Furnace REVERSE AIR Fa	n (29-Jun-22)	
		OVERALL LEVEL	1K-20KHz
МОН – М	NOTOR OUTBOARD HORIZONTAL	.041 In/Sec	.217 G-s
MIH - M	OTOR INBOARD HORIZONTAL	.032 In/Sec	.381 G-s
MIA - M	NOTOR INBOARD AXIAL	.027 In/Sec	.231 G-s
FIA - F	AN INBOARD AXIAL	.054 In/Sec	.4/1 G-S
FIH - F	AN INBOARD HORIZONTAL	.028 In/Sec	.740 G-S
FOII - F	AN OUTBOARD HORIZONIAL	.025 111/566	.077 G-S
EFBHF	- East Furnace Bag House	Fan (29-Jun-22)	
		OVERALL LEVEL	1K-20KHz
МОН - М	NOTOR OUTBOARD HORIZONTAL	.063 In/Sec	.574 G-s
MIH - M	NOTOR INBOARD HORIZONTAL	.076 In/Sec	.514 G-s
MIA - M	NOTOR INBOARD AXIAL	.034 In/Sec	.502 G-s
FIA - F	'AN INBOARD AXIAL	.096 In/Sec	.841 G-s
FIH - F	'AN INBOARD HORIZONTAL	.111 In/Sec	1.091 G-s
FOH – F	'AN OUTBOARD HORIZONTAL	.105 In/Sec	.744 G-s
MF.BHF.	- WEST Furnace Bag House	Fan (29-Jun-22)	1 V 20VH-
		081 TR/Soc	118 C-s
MUH - M	NOTOR INBOARD HORIZONTAL	115 In/Sec	.410 G-S 747 G-S
MTA - M	OTOR INBOARD AXIAL	090 In/Sec	308 G-s
FIA - F	'AN INBOARD AXIAL	.119 In/Sec	1.378 G-s
FIH - F	'AN INBOARD HORIZONTAL	.131 In/Sec	1.505 G-s
FOH – F	'AN OUTBOARD HORIZONTAL	.125 In/Sec	1.001 G-s
NCHYDP	- North CASTER Hyd PUMP	(29-Jun-22)	
		OVERALL LEVEL	1K-20KHz
MOH - M	NOTOR OUTBOARD HORIZONTAL	.161 In/Sec	1.575 G-s
MIH - M	NOTOR INBOARD HORIZONTAL	.215 In/Sec	1.207 G-s
PIH - P	UMP INBOARD HORIZONTAL	.333 In/Sec	1.712 G-s
MTDOUVD		(20 - 7 - 22)	
MIDCHID	- MIDDLE CASIER NYO POMP	(23-Juli-22) Overatit tevet	1K-20KH-
МОН – М	OTOR OUTBOARD HORTZONTAL	.124 In/Sec	.706 G-9
MJH - M	OTOR INBOARD HORIZONTAL	.098 Tn/Sec	.916 G-s

PIH - PUMP INBOARD HORIZONTAL	.199 In/Sec	1.761 G-s
SCEXFAN - SPRAY CHAMBER EXHAUST Fan	(29-Jun-22)	
	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.671 In/Sec	.180 G-s
MIH - MOTOR INBOARD HORIZONTAL	.719 In/Sec	.296 G-s
MIA - MOTOR INBOARD AXIAL	.789 In/Sec	.159 G-s
FIH - FAN INBOARD HORIZONTAL	.686 In/Sec	.158 G-s
FOH - FAN OUTBOARD HORIZONTAL	.508 In/Sec	.674 G-s
ENARCOHYDP - EAST NARCO Hyd PUMP	(29-Jun-22)	
	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.057 In/Sec	.074 G-s
MIH - MOTOR INBOARD HORIZONTAL	.065 In/Sec	.316 G-s
PIV - PUMP INBOARD VERTICAL	.264 In/Sec	.739 G-s
Clarification Of Vibration Units: Acc> G-s RMS		