



7030 Ryburn Dr. Millington, TN

Phone: (901) 873-5300

Fax: (901) 873-5301

www.gohispeed.com

September 18, 2020

Nucor Roll Mill Jackson-Flowood, MS

Subject: September 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.

<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.

# Defects

### **Roll Stand 1A Planetary Gearbox**

Overall vibration amplitudes are varying with survey while gearbox data show signs of distress. We will continue to monitor this unit closely. Still rated as a **CLASS I** defect for now.

# Roll Stand 1 Motor

There has been a significant amount of 360 Hz. vibration especially at the drive end axial of the motor. There are also several rpm sidebands around the 360 Hz. peak. This indicates a drive problem such as SCR card fault. There could also be an issue with the armature. It is recommended to inspect the drive as soon as practical. This issue will be monitored closely. Because of the electrical vibration, this is rated as a **CLASS II** defect.

## Roll Stand 2 int. Gearbox

Input rpm sidebands around the gear mesh frequencies indicate possible oscillation of the input gear set. This could be from an issue with the speed synch on the drives, drive line slop, or some other process issue. Gearbox may need an internal inspection in the future. Rated as a **CLASS I** defect.

# Roll Stand 5

Vibration decreased in the gearbox outboard side this survey. A dominant gear mesh vibration is present towards the output of the gearbox. The up and down amplitude of this peak from month to month is likely due to change in tooth load and machine speed. We will continue to monitor this very closely. Rated as a **CLASS I** defect for now.

#### Roll Stand 5 Cooling Fan Motor

There still appears to be a vibration in this unit that may be due to imbalance of the fan wheel. Inspect, clean fan wheel as time allows. Ensure all fastening bolts are tight. We will monitor this closely. Rated as a **CLASS II** defect.

### Roll Stand 6

Overall vibration decreased from last month. A dominant gear mesh vibration is present towards the output of the gearbox. The up and down amplitude of this peak is likely due to change in tooth load and speed. This issue seems to have begun after gearbox was repaired. We will continue to monitor this very closely. Rated as a **CLASS I** defect.

# Roll Stand 7

Output side of the gearbox vibration decreased this survey. We still suspect this to be possibly due to a resonant gear mesh frequency vibration. The up and down amplitude of this peak from month to month is likely due to change in tooth load and machine speed. We will continue to monitor this very closely. Rated as a **CLASS I** defect.

# Roll Stand 9

Vibration has increased this survey in the input side of the gearbox. Overall amplitude much higher than normal. Data shows several harmonics at what appears to be gear mesh frequency of the input gear. It is unclear if process/load is affecting this sudden increase in amplitudes. An inspection of the gearbox may be needed in the near future. Rated as a **CLASS II** defect.

#### Roll Stand 13 Cooling Fan Motor

Fan appears to have vibration associated with fan imbalance. Resonance may also be a factor as this vibration does seem to vary slightly depending on the speed of the DC motor. We will monitor this closely. Rated as a **CLASS I** defect.

# Ejector Fan

There still seems to be higher than normal high frequency acceleration amplitude in the fan bearings. This could possibly be a lubrication issue. We will monitor this issue closely. Rated as a **CLASS I** defect for now.

### Furnace Cooling Tower Drive South

Motor has an increase in axial vibration. This appears to be occurring at 1 x motor rpm and may indicate an issue with the drive coupling or some other structural issue such as loose fasteners. This could also be caused by a resonance in this unit due to the fact that the blade pitch has been altered. We will continue to monitor this issue closely. Rated as a **CLASS II** defect.

MEASUREMENT POINT   OVERALL LEVEL   HED / VHI     STD1A   - Stand 1A   (17-Sep-20)     MOH   .107 In/Sec   .029 G-s     MIH   .089 In/Sec   .039 G-s     MIA   .087 In/Sec   .099 G-s     COH   .254 In/Sec   .070 G-s     GIA   .065 In/Sec   .043 G-s     GIA   .065 In/Sec   .043 G-s     GIA   .059 In/Sec   .048 G-s     GIA   .059 In/Sec   .056 G-s     GIA   .056 In/Sec   .036 G-s     GIA   .017 In/Sec   .026 G-s     GOH   .048 In/Sec   .027 G-s     MOH   .048 In/Sec   .026 G-s     MIA   .115 In/Sec   .026 G-s     MIA   .115 In/Sec   .026 G-s     MIA   .106 In/Sec   .067 G-s     MIA   .115 In/Sec   .026 G-s     MIA   .106 In/Sec   .067 G-s     MIA   .106 In/Sec				nucorja9 Roll Mil			
OVERALL LEVEL     IR-20KHz       MOH     .107 In/Sec     .029 G-s       MIA     .087 In/Sec     .039 G-s       COH     .254 In/Sec     .070 G-s       GIA     .065 In/Sec     .043 G-s       GIA     .055 In/Sec     .043 G-s       GIA     .059 In/Sec     .054 G-s       GIA     .059 In/Sec     .056 G-s       GIA     .055 In/Sec     .056 G-s       GIA     .056 In/Sec     .034 G-s       MOH     .048 In/Sec     .034 G-s       MIA     .016 In/Sec     .026 G-s       STD1     - Stand 1     (17-Sep-20)       OVERALL LEVEL     IK-20KHz       MOH     .069 In/Sec     .067 G-s       MIA     .106 In/Sec     .026 G-s       STD1     - Stand 1     (17-Sep-20)       OVERALL LEVEL     IK-20KHz       MOH     .069 In/Sec     .026 G-s <tr< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th>•</th></tr<>							•
OVERALL LEVEL     IR-20KHz       MOH     .107 In/Sec     .029 G-s       MIA     .087 In/Sec     .039 G-s       COH     .254 In/Sec     .070 G-s       GIA     .065 In/Sec     .043 G-s       GIA     .055 In/Sec     .043 G-s       GIA     .059 In/Sec     .054 G-s       GIA     .059 In/Sec     .056 G-s       GIA     .055 In/Sec     .056 G-s       GIA     .056 In/Sec     .034 G-s       MOH     .048 In/Sec     .034 G-s       MIA     .016 In/Sec     .026 G-s       STD1     - Stand 1     (17-Sep-20)       OVERALL LEVEL     IK-20KHz       MOH     .069 In/Sec     .067 G-s       MIA     .106 In/Sec     .026 G-s       STD1     - Stand 1     (17-Sep-20)       OVERALL LEVEL     IK-20KHz       MOH     .069 In/Sec     .026 G-s <tr< th=""><th>STD1A</th><th></th><th>- Stand</th><th>1<b>A</b></th><th></th><th></th><th>(17-Sep-20)</th></tr<>	STD1A		- Stand	1 <b>A</b>			(17-Sep-20)
MIH     .089 In/Sec     .039 G-s       MIA     .087 In/Sec     .099 G-s       COH     .254 In/Sec     .070 G-s       GIA     .065 In/Sec     .043 G-s       GIH     .126 In/Sec     .075 G-s       GI2     .092 In/Sec     .142 G-s       GI4     .059 In/Sec     .155 G-s       GI5     .043 In/Sec     .054 G-s       GI6     .035 In/Sec     .056 G-s       GOH     .038 In/Sec     .015 G-s       STD2A     - Stand 2A     (17-Sep-20)       OVERALL LEVEL     IK-20KHz       MOH     .048 In/Sec     .034 G-s       MIA     .115 In/Sec     .026 G-s       COH     .106 In/Sec     .090 G-s       MIA     .115 In/Sec     .026 G-s       COH     .106 In/Sec     .090 G-s       MIA     .169 In/Sec     .027 G-s       GIA     .073 In/Sec     .028 G-s       STD1     - Stand 1     (17-Sep-20)       OVERALL LEVEL     IK-20KHz       MOH     .061 In/Sec     .0116 G-s<					OVERAI	LL LEVEL	-
MIA     .087 In/Sec     .099 G-s       COH     .254 In/Sec     .070 G-s       GIA     .065 In/Sec     .043 G-s       GIH     .126 In/Sec     .048 G-s       GI3     .079 In/Sec     .142 G-s       GI4     .059 In/Sec     .056 G-s       GI5     .043 In/Sec     .056 G-s       GI6     .035 In/Sec     .015 G-s       STD2A     - Stand 2A     (17-Sep-20)       OVERALL LEVEL     IK-20KHz       MOH     .048 In/Sec     .034 G-s       MIA     .115 In/Sec     .026 G-s       COH     .016 In/Sec     .093 G-s       MIA     .115 In/Sec     .026 G-s       COH     .106 In/Sec     .049 G-s       STD1     - Stand 1     (17-Sep-20)       OVERALL LEVEL     IK-20KHz       MOH     .069 In/Sec     .067 G-s       MIH     .090 In/Sec     .090 G-s       MIA     .169 In/Sec     .027 G-s       GIH     .084 In/Sec     .027 G-s       GIH     .080 In/Sec     .010 G-s </td <td></td> <td>мон</td> <td></td> <td></td> <td>.107</td> <td>In/Sec</td> <td>.029 G-s</td>		мон			.107	In/Sec	.029 G-s
MIA     .087 In/Sec     .099 G-s       COH     .254 In/Sec     .070 G-s       GIA     .065 In/Sec     .043 G-s       GIH     .126 In/Sec     .048 G-s       GI3     .079 In/Sec     .142 G-s       GI4     .059 In/Sec     .056 G-s       GI5     .043 In/Sec     .056 G-s       GI6     .035 In/Sec     .015 G-s       STD2A     - Stand 2A     (17-Sep-20)       OVERALL LEVEL     IK-20KHz       MOH     .048 In/Sec     .034 G-s       MIA     .115 In/Sec     .026 G-s       COH     .016 In/Sec     .093 G-s       MIA     .115 In/Sec     .026 G-s       COH     .106 In/Sec     .049 G-s       STD1     - Stand 1     (17-Sep-20)       OVERALL LEVEL     IK-20KHz       MOH     .069 In/Sec     .067 G-s       MIH     .090 In/Sec     .090 G-s       MIA     .169 In/Sec     .027 G-s       GIH     .084 In/Sec     .027 G-s       GIH     .080 In/Sec     .010 G-s </td <td></td> <td>MIH</td> <td></td> <td></td> <td>.089</td> <td>In/Sec</td> <td>.039 G-s</td>		MIH			.089	In/Sec	.039 G-s
GIA   .065 In/Sec   .043 G-s     GIH   .126 In/Sec   .048 G-s     GI2   .092 In/Sec   .048 G-s     GI3   .079 In/Sec   .142 G-s     GI4   .059 In/Sec   .142 G-s     GI5   .043 In/Sec   .054 G-s     GI6   .035 In/Sec   .056 G-s     GOH   .038 In/Sec   .015 G-s     STD2A   - Stand 2A   (17-Sep-20)     OVERALL LEVEL   IK-20KHz     MOH   .048 In/Sec   .034 G-s     MIA   .115 In/Sec   .026 G-s     COH   .106 In/Sec   .049 G-s     STD1   - Stand 1   (17-Sep-20)     OVERALL LEVEL   IK-20KHz     MOH   .069 In/Sec   .026 G-s     COH   .106 In/Sec   .037 G-s     GIA   .073 In/Sec   .026 G-s     GIH   .069 In/Sec   .026 G-s     COH   .016 In/Sec   .027 G-s     GIA   .071 In/Sec   .026 G-s     GIA   .013 In/Sec   .027 G-s     GIA   .017 In/Sec   .040 G-s		MIA			.087	In/Sec	.099 G-s
GIH   .126 In/Sec   .075 G-s     GI2   .092 In/Sec   .048 G-s     GI3   .079 In/Sec   .142 G-s     GI4   .059 In/Sec   .142 G-s     GI5   .043 In/Sec   .054 G-s     GI6   .035 In/Sec   .056 G-s     GOH   .038 In/Sec   .015 G-s     STD2A   - Stand 2A   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .048 In/Sec   .033 G-s     MIA   .115 In/Sec   .026 G-s     COH   .006 In/Sec   .049 G-s     STD1   - Stand 1   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .069 In/Sec   .090 G-s     MIH   .090 In/Sec   .090 G-s     MIA   .169 In/Sec   .027 G-s     GIA   .073 In/Sec   .028 G-s     GIH   .084 In/Sec   .063 G-s     STD2   - Stand 2   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .061 In/Sec   .026 G-s     GIA   .071 In/Sec   .040 G-s     MIH		СОН					
GI2   .092 In/Sec   .048 G-s     GI3   .079 In/Sec   .142 G-s     GI4   .059 In/Sec   .155 G-s     GI5   .043 In/Sec   .056 G-s     GOH   .038 In/Sec   .015 G-s     STD2A   - Stand 2A   (17-Sep-20)     OVERALL LEVEL   IK-20KHz     MOH   .048 In/Sec   .033 G-s     MIA   .015 In/Sec   .026 G-s     COH   .048 In/Sec   .034 G-s     MIA   .056 In/Sec   .093 G-s     MIA   .015 In/Sec   .026 G-s     COH   .016 In/Sec   .026 G-s     STD1   - Stand 1   (17-Sep-20)     OVERALL LEVEL   IK-20KHz     MOH   .069 In/Sec   .026 G-s     MIH   .090 In/Sec   .028 G-s     MIA   .169 In/Sec   .027 G-s     GIA   .073 In/Sec   .028 G-s     GIH   .084 In/Sec   .027 G-s     COH   .103 In/Sec   .115 G-s     STD2   - Stand 2   (17-Sep-20)     OVERALL LEVEL   IK-20KHz   MOH		GIA			.065	In/Sec	.043 G-s
GI3   .079 In/Sec   .142 G-s     GI4   .059 In/Sec   .054 G-s     GI5   .043 In/Sec   .056 G-s     GOH   .038 In/Sec   .015 G-s     STD2A   - Stand 2A   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .048 In/Sec   .034 G-s     MIA   .056 In/Sec   .033 G-s     COH   .016 In/Sec   .026 G-s     COH   .016 In/Sec   .026 G-s     COH   .069 In/Sec   .026 G-s     COH   .069 In/Sec   .026 G-s     MIH   .069 In/Sec   .026 G-s     MIH   .069 In/Sec   .027 G-s     MIA   .169 In/Sec   .027 G-s     GIA   .073 In/Sec   .028 G-s     GIH   .084 In/Sec   .027 G-s     COH   .103 In/Sec   .016 G-s     MIA   .169 In/Sec   .027 G-s     COH   .001 In/Sec   .016 G-s     MIA   .169 In/Sec   .027 G-s     COH   .001 In/Sec   .017 G-s     GIA   .071 In/Sec   .040 G-s		GIH			.126	In/Sec	.075 G-s
GI3   .079 In/Sec   .142 G-s     GI4   .059 In/Sec   .054 G-s     GI5   .043 In/Sec   .056 G-s     GOH   .038 In/Sec   .015 G-s     STD2A   - Stand 2A   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .048 In/Sec   .034 G-s     MIH   .056 In/Sec   .033 G-s     MIA   .115 In/Sec   .026 G-s     COH   .016 In/Sec   .049 G-s     STD1   - Stand 1   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .069 In/Sec   .026 G-s     COH   .016 In/Sec   .026 G-s     MIH   .069 In/Sec   .026 G-s     MIA   .169 In/Sec   .027 G-s     GIA   .073 In/Sec   .028 G-s     GIH   .084 In/Sec   .027 G-s     COH   .103 In/Sec   .028 G-s     GIH   .090 In/Sec   .116 G-s     MIA   .169 In/Sec   .017 G-s     GIH   .087 In/Sec   .017 G-s     GIH   .090 In/Sec   .116 G-s		GI2			. 092	In/Sec	.048 G-s
GI5   .043 In/Sec   .054 G-s     GI6   .035 In/Sec   .056 G-s     GOH   .038 In/Sec   .015 G-s     STD2A   - Stand 2A   (17-Sep-20)     MOH   .048 In/Sec   .034 G-s     MOH   .048 In/Sec   .033 G-s     MIA   .056 In/Sec   .093 G-s     MIA   .115 In/Sec   .026 G-s     COH   .106 In/Sec   .049 G-s     STD1   - Stand 1   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .069 In/Sec   .067 G-s     MIH   .090 In/Sec   .090 G-s     MIA   .169 In/Sec   .037 G-s     GIA   .073 In/Sec   .028 G-s     GIH   .084 In/Sec   .027 G-s     COH   .103 In/Sec   .016 G-s     STD2   - Stand 2   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .071 In/Sec   .040 G-s     MIH   .090 In/Sec   .116 G-s     MIA   .160 In/Sec   .115 G-s     GIA   .113 In/Sec   .040 G-s		GI3			.079	In/Sec	.142 G-s
GI5   .043 In/Sec   .054 G-s     GI6   .035 In/Sec   .056 G-s     GOH   .038 In/Sec   .015 G-s     STD2A   - Stand 2A   (17-Sep-20)     MOH   .048 In/Sec   .034 G-s     MOH   .048 In/Sec   .033 G-s     MIA   .056 In/Sec   .093 G-s     MIA   .115 In/Sec   .026 G-s     COH   .106 In/Sec   .049 G-s     STD1   - Stand 1   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .069 In/Sec   .067 G-s     MIH   .090 In/Sec   .090 G-s     MIA   .169 In/Sec   .037 G-s     GIA   .073 In/Sec   .028 G-s     GIH   .084 In/Sec   .027 G-s     COH   .103 In/Sec   .016 G-s     STD2   - Stand 2   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .071 In/Sec   .040 G-s     MIH   .090 In/Sec   .116 G-s     MIA   .160 In/Sec   .115 G-s     GIA   .113 In/Sec   .040 G-s		GI4			.059	In/Sec	.155 G-s
GOH     .038 In/Sec     .015 G-s       STD2A     - Stand 2A     (17-Sep-20)       MOH     .048 In/Sec     .034 G-s       MIH     .056 In/Sec     .093 G-s       MIA     .115 In/Sec     .026 G-s       COH     .106 In/Sec     .049 G-s       STD1     - Stand 1     (17-Sep-20)       OVERALL LEVEL     IK-20KHz       MOH     .106 In/Sec     .049 G-s       STD1     - Stand 1     (17-Sep-20)       OVERALL LEVEL     IK-20KHz     .069 G-s       MIH     .090 In/Sec     .090 G-s       MIA     .169 In/Sec     .027 G-s       GIH     .084 In/Sec     .027 G-s       GIH     .084 In/Sec     .027 G-s       COH     .103 In/Sec     .063 G-s       STD2     - Stand 2     (17-Sep-20)       OVERALL LEVEL     IK-20KHz       MOH     .071 In/Sec     .040 G-s       MIA     .160 In/Sec     .115 G-s       GIA     .113 In/Sec     .073 G-s       GIA     .087 In/Sec <td< td=""><td></td><td>GI5</td><td></td><td></td><td>.043</td><td>In/Sec</td><td>.054 G-s</td></td<>		GI5			.043	In/Sec	.054 G-s
STD2A   - Stand 2A   (17-Sep-20)     MOH   .048 In/Sec   .034 G-s     MIH   .056 In/Sec   .093 G-s     MIA   .115 In/Sec   .026 G-s     COH   .115 In/Sec   .026 G-s     STD1   - Stand 1   (17-Sep-20)     OVERALL LEVEL   IK-20KHz     MOH   .069 In/Sec   .049 G-s     STD1   - Stand 1   (17-Sep-20)     OVERALL LEVEL   IK-20KHz   .069 In/Sec     MOH   .069 In/Sec   .067 G-s     MIA   .169 In/Sec   .037 G-s     GIA   .073 In/Sec   .026 G-s     GIA   .073 In/Sec   .028 G-s     GIH   .084 In/Sec   .027 G-s     COH   .103 In/Sec   .063 G-s     STD2   - Stand 2   (17-Sep-20)     OVERALL LEVEL   IK-20KHz   .040 G-s     MOH   .071 In/Sec   .017 G-s     GIA   .113 In/Sec   .017 G-s     GIA   .113 In/Sec   .017 G-s     GIH   .087 In/Sec   .078 G-s     STD3   - Stand 3   (1		GI6					
OVERALL LEVEL     IK-20KHz       MOH     .048 In/Sec     .034 G-s       MIH     .056 In/Sec     .093 G-s       MIA     .115 In/Sec     .026 G-s       COH     .106 In/Sec     .049 G-s       STD1     - Stand 1     (17-Sep-20)       OVERALL LEVEL     1K-20KHz       MOH     .069 In/Sec     .067 G-s       MIH     .090 In/Sec     .090 G-s       MIA     .169 In/Sec     .037 G-s       GIA     .073 In/Sec     .028 G-s       GIH     .084 In/Sec     .027 G-s       COH     .103 In/Sec     .063 G-s       STD2     - Stand 2     (17-Sep-20)       OVERALL LEVEL     1K-20KHz       MOH     .071 In/Sec     .040 G-s       MIH     .090 In/Sec     .115 G-s       GIA     .113 In/Sec     .017 G-s       GIH     .087 In/Sec     .073 G-s       COH     .087 In/Sec     .073 G-s       GIH     .087 In/Sec     .017 G-s       GIH     .066 In/Sec     .247 G-s <tr< td=""><td></td><td>GOH</td><td></td><td></td><td>.038</td><td>In/Sec</td><td>.015 G-s</td></tr<>		GOH			.038	In/Sec	.015 G-s
MOH   .048 In/Sec   .034 G-s     MIH   .056 In/Sec   .093 G-s     MIA   .115 In/Sec   .026 G-s     COH   .106 In/Sec   .049 G-s     STD1   - Stand 1   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .069 In/Sec   .067 G-s     MIH   .090 In/Sec   .090 G-s     MIA   .169 In/Sec   .037 G-s     GIA   .073 In/Sec   .028 G-s     GIH   .084 In/Sec   .027 G-s     COH   .0103 In/Sec   .063 G-s     STD2   - Stand 2   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .071 In/Sec   .063 G-s     STD2   - Stand 2   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .071 In/Sec   .016 G-s     MIH   .090 In/Sec   .115 G-s     GIA   .113 In/Sec   .017 G-s     GIH   .087 In/Sec   .073 G-s     COH   .087 In/Sec   .078 G-s     STD3   - Stand 3   (17-Sep-20)     OVERALL LE	STD2A		- Stand	2A			· • ·
MIA   .115 In/Sec   .026 G-s     COH   .106 In/Sec   .049 G-s     STD1   - Stand 1   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .069 In/Sec   .067 G-s     MIH   .090 In/Sec   .090 G-s     MIA   .169 In/Sec   .037 G-s     GIA   .073 In/Sec   .028 G-s     GIH   .084 In/Sec   .027 G-s     COH   .103 In/Sec   .063 G-s     STD2   - Stand 2   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .071 In/Sec   .040 G-s     MIH   .090 In/Sec   .116 G-s     MIA   .160 In/Sec   .115 G-s     GIA   .071 In/Sec   .040 G-s     MIA   .160 In/Sec   .115 G-s     GIA   .013 In/Sec   .017 G-s     GIA   .087 In/Sec   .073 G-s     COH   .087 In/Sec   .078 G-s     STD3   - Stand 3   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .066 In/Sec   .247 G-s     MIH					OVERAI	LL LEVEL	1K-20KHz
MIA   .115 In/Sec   .026 G-s     COH   .106 In/Sec   .049 G-s     STD1   - Stand 1   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .069 In/Sec   .067 G-s     MIH   .090 In/Sec   .090 G-s     MIA   .169 In/Sec   .037 G-s     GIA   .073 In/Sec   .028 G-s     GIH   .084 In/Sec   .027 G-s     COH   .103 In/Sec   .063 G-s     STD2   - Stand 2   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .071 In/Sec   .040 G-s     MIH   .090 In/Sec   .116 G-s     MIA   .160 In/Sec   .115 G-s     GIA   .071 In/Sec   .040 G-s     MIA   .160 In/Sec   .115 G-s     GIA   .013 In/Sec   .017 G-s     GIA   .087 In/Sec   .073 G-s     COH   .087 In/Sec   .078 G-s     STD3   - Stand 3   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .066 In/Sec   .247 G-s     MIH		MOH			.048	In/Sec	.034 G-s
COH   .106 In/Sec   .049 G-s     STD1   - Stand 1   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .069 In/Sec   .067 G-s     MIH   .090 In/Sec   .090 G-s     MIA   .169 In/Sec   .037 G-s     GIA   .073 In/Sec   .028 G-s     GIH   .084 In/Sec   .027 G-s     COH   .103 In/Sec   .063 G-s     STD2   - Stand 2   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .071 In/Sec   .040 G-s     MIA   .160 In/Sec   .115 G-s     GIA   .113 In/Sec   .017 G-s     GIA   .087 In/Sec   .073 G-s     GIH   .087 In/Sec   .073 G-s     GIH   .066 In/Sec   .247 G-s     MIH   .066 In/Sec   .247 G-s     MIA   .192 In/Sec   .063 G-s     GIA   .034 In/Sec   .164 G-s     MIA   .192 In/Sec   .063 G-s     GIA   .034 In/Sec   .164 G-s     GIA   .034 In/Sec   .164 G-s <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>							
STD1   - Stand 1   (17-Sep-20)     MOH   .069 In/Sec   .067 G-s     MIH   .090 In/Sec   .090 G-s     MIA   .169 In/Sec   .037 G-s     GIA   .073 In/Sec   .028 G-s     GIH   .084 In/Sec   .027 G-s     COH   .103 In/Sec   .063 G-s     STD2   - Stand 2   (17-Sep-20)     OVERALL LEVEL   IK-20KHz     MOH   .071 In/Sec   .040 G-s     MIH   .090 In/Sec   .116 G-s     MIA   .160 In/Sec   .017 G-s     GIA   .087 In/Sec   .073 G-s     GIH   .066 In/Sec   .078 G-s     STD3   - Stand 3   (17-Sep-20)     OVERALL LEVEL   IK-20KHz     MOH   .071 In/Sec   .017 G-s     GIA   .113 In/Sec   .017 G-s     STD3   - Stand 3   (17-Sep-20)     OVERALL LEVEL   IK-20KHz     MOH   .066 In/Sec   .247 G-s     MIH   .066 In/Sec   .247 G-s     MIH   .010 In/Sec   .063 G-s     MIH							
MOH     .069 In/Sec     .067 G-s       MIH     .090 In/Sec     .090 G-s       MIA     .169 In/Sec     .037 G-s       GIA     .073 In/Sec     .028 G-s       GIH     .084 In/Sec     .027 G-s       COH     .103 In/Sec     .063 G-s       STD2     - Stand 2     (17-Sep-20)       OVERALL LEVEL     1K-20KHz       MOH     .071 In/Sec     .040 G-s       MIH     .090 In/Sec     .116 G-s       MIA     .160 In/Sec     .116 G-s       MIA     .090 In/Sec     .017 G-s       GIA     .113 In/Sec     .017 G-s       GIH     .087 In/Sec     .078 G-s       COH     .066 In/Sec     .247 G-s       MIH     .161 In/Sec     .040 G-s       MIA     .192 In/Sec     .063 G-s       GIA     .034 In/Sec     .164 G-s       GIA     .034 In/Sec     .164 G-s		СОН			.106	In/Sec	.049 G-s
MOH   .069 In/Sec   .067 G-s     MIH   .090 In/Sec   .090 G-s     MIA   .169 In/Sec   .037 G-s     GIA   .073 In/Sec   .028 G-s     GIH   .084 In/Sec   .027 G-s     COH   .103 In/Sec   .063 G-s     STD2   - Stand 2   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .071 In/Sec   .040 G-s     MIH   .090 In/Sec   .116 G-s     MIA   .160 In/Sec   .115 G-s     GIA   .113 In/Sec   .017 G-s     GIH   .087 In/Sec   .078 G-s     COH   .400 In/Sec   .078 G-s     STD3   - Stand 3   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .066 In/Sec   .073 G-s     COH   .0066 In/Sec   .247 G-s     MIH   .161 In/Sec   .040 G-s     MIA   .192 In/Sec   .063 G-s     GIA   .034 In/Sec   .164 G-s     GIH   .044 In/Sec   .175 G-s	STD1		- Stand	1			
MIH   .090 In/Sec   .090 G-s     MIA   .169 In/Sec   .037 G-s     GIA   .073 In/Sec   .028 G-s     GIH   .084 In/Sec   .027 G-s     COH   .103 In/Sec   .063 G-s     STD2   - Stand 2   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .071 In/Sec   .040 G-s     MIH   .090 In/Sec   .116 G-s     MIA   .160 In/Sec   .115 G-s     GIA   .113 In/Sec   .017 G-s     GIH   .087 In/Sec   .073 G-s     COH   .066 In/Sec   .247 G-s     MIH   .161 In/Sec   .040 G-s     MIH   .161 In/Sec   .040 G-s     MIA   .192 In/Sec   .063 G-s     GIA   .034 In/Sec   .164 G-s     GIA   .034 In/Sec   .164 G-s     GIH   .044 In/Sec   .175 G-s					OVERAI	LL LEVEL	1K-20KHz
MIA   .169 In/Sec   .037 G-s     GIA   .073 In/Sec   .028 G-s     GIH   .084 In/Sec   .027 G-s     COH   .103 In/Sec   .063 G-s     STD2   - Stand 2   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .071 In/Sec   .040 G-s     MIH   .090 In/Sec   .116 G-s     MIA   .160 In/Sec   .115 G-s     GIA   .113 In/Sec   .017 G-s     GIH   .087 In/Sec   .078 G-s     STD3   - Stand 3   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .066 In/Sec   .078 G-s     STD3   - Stand 3   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .066 In/Sec   .247 G-s     MIH   .161 In/Sec   .040 G-s     MIA   .192 In/Sec   .063 G-s     GIA   .034 In/Sec   .164 G-s     GIH   .044 In/Sec   .175 G-s					.069	In/Sec	.067 G-s
GIA   .073 In/Sec   .028 G-s     GIH   .084 In/Sec   .027 G-s     COH   .103 In/Sec   .063 G-s     STD2   - Stand 2   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .071 In/Sec   .040 G-s     MIH   .090 In/Sec   .116 G-s     MIA   .160 In/Sec   .115 G-s     GIA   .113 In/Sec   .017 G-s     GIH   .087 In/Sec   .078 G-s     COH   .400 In/Sec   .078 G-s     STD3   - Stand 3   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .066 In/Sec   .247 G-s     MIH   .161 In/Sec   .040 G-s     MIH   .161 In/Sec   .040 G-s     MIA   .192 In/Sec   .063 G-s     GIA   .034 In/Sec   .164 G-s     GIH   .044 In/Sec   .175 G-s							
GIH   .084 In/Sec   .027 G-s     COH   .103 In/Sec   .063 G-s     STD2   - Stand 2   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .071 In/Sec   .040 G-s     MIH   .090 In/Sec   .116 G-s     MIA   .160 In/Sec   .115 G-s     GIA   .113 In/Sec   .017 G-s     GIH   .087 In/Sec   .073 G-s     COH   .400 In/Sec   .078 G-s     STD3   - Stand 3   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .066 In/Sec   .247 G-s     MIH   .161 In/Sec   .040 G-s     MIA   .192 In/Sec   .063 G-s     GIA   .034 In/Sec   .164 G-s     GIH   .044 In/Sec   .175 G-s							
COH   .103 In/Sec   .063 G-s     STD2   - Stand 2   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .071 In/Sec   .040 G-s     MIH   .090 In/Sec   .116 G-s     MIA   .160 In/Sec   .115 G-s     GIA   .113 In/Sec   .017 G-s     GIH   .087 In/Sec   .073 G-s     COH   .400 In/Sec   .078 G-s     STD3   - Stand 3   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .066 In/Sec   .247 G-s     MIH   .161 In/Sec   .040 G-s     MIA   .192 In/Sec   .063 G-s     GIA   .034 In/Sec   .164 G-s     GIH   .044 In/Sec   .175 G-s					.073	In/Sec	.028 G-s
STD2   - Stand 2   (17-Sep-20)     MOH   .071 In/Sec   .040 G-s     MIH   .090 In/Sec   .116 G-s     MIA   .160 In/Sec   .115 G-s     GIA   .113 In/Sec   .017 G-s     GIH   .087 In/Sec   .078 G-s     STD3   - Stand 3   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .066 In/Sec   .247 G-s     MIH   .161 In/Sec   .040 G-s     MIA   .192 In/Sec   .063 G-s     GIA   .034 In/Sec   .164 G-s     GIH   .044 In/Sec   .175 G-s		-			.084	In/Sec	.027 G-s
OVERALL LEVEL     IK-20KHz       MOH     .071 In/Sec     .040 G-s       MIH     .090 In/Sec     .116 G-s       MIA     .160 In/Sec     .115 G-s       GIA     .113 In/Sec     .017 G-s       GIH     .087 In/Sec     .078 G-s       COH     .400 In/Sec     .078 G-s       STD3     - Stand 3     (17-Sep-20)       OVERALL LEVEL     IK-20KHz       MOH     .066 In/Sec     .247 G-s       MIH     .161 In/Sec     .040 G-s       MIA     .192 In/Sec     .063 G-s       GIA     .034 In/Sec     .164 G-s       GIH     .044 In/Sec     .175 G-s		СОН			.103	In/Sec	.063 G-s
MOH   .071 In/Sec   .040 G-s     MIH   .090 In/Sec   .116 G-s     MIA   .160 In/Sec   .115 G-s     GIA   .113 In/Sec   .017 G-s     GIH   .087 In/Sec   .078 G-s     COH   .400 In/Sec   .078 G-s     STD3   - Stand 3   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .066 In/Sec   .247 G-s     MIH   .161 In/Sec   .040 G-s     MIA   .192 In/Sec   .063 G-s     GIA   .034 In/Sec   .164 G-s     GIH   .044 In/Sec   .175 G-s	STD2		- Stand	2			-
MIH .090 In/Sec .116 G-s MIA .160 In/Sec .115 G-s GIA .113 In/Sec .017 G-s GIH .087 In/Sec .073 G-s COH .400 In/Sec .078 G-s STD3 - Stand 3 (17-Sep-20) OVERALL LEVEL 1K-20KHz MOH .066 In/Sec .247 G-s MIH .161 In/Sec .040 G-s MIA .192 In/Sec .063 G-s GIA .034 In/Sec .164 G-s GIH .044 In/Sec .175 G-s							
MIA .160 In/Sec .115 G-s GIA .113 In/Sec .017 G-s GIH .087 In/Sec .073 G-s COH .400 In/Sec .078 G-s STD3 - Stand 3 (17-Sep-20) OVERALL LEVEL 1K-20KHz MOH .066 In/Sec .247 G-s MIH .161 In/Sec .040 G-s MIA .192 In/Sec .063 G-s GIA .034 In/Sec .164 G-s GIH .044 In/Sec .175 G-s					.071	In/Sec	.040 G-s
GIA .113 In/Sec .017 G-s GIH .087 In/Sec .073 G-s COH .400 In/Sec .078 G-s STD3 - Stand 3 (17-Sep-20) OVERALL LEVEL 1K-20KHz MOH .066 In/Sec .247 G-s MIH .161 In/Sec .040 G-s MIA .192 In/Sec .063 G-s GIA .034 In/Sec .164 G-s GIH .044 In/Sec .175 G-s							
GIH   .087 In/Sec   .073 G-s     COH   .400 In/Sec   .078 G-s     STD3   - Stand 3   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .066 In/Sec   .247 G-s     MIH   .161 In/Sec   .040 G-s     MIA   .192 In/Sec   .063 G-s     GIA   .034 In/Sec   .164 G-s     GIH   .044 In/Sec   .175 G-s							
COH .400 In/Sec .078 G-s STD3 - Stand 3 (17-Sep-20) OVERALL LEVEL 1K-20KHz MOH .066 In/Sec .247 G-s MIH .161 In/Sec .040 G-s MIA .192 In/Sec .063 G-s GIA .034 In/Sec .164 G-s GIH .044 In/Sec .175 G-s							
STD3   - Stand 3   (17-Sep-20)     OVERALL LEVEL   1K-20KHz     MOH   .066 In/Sec   .247 G-s     MIH   .161 In/Sec   .040 G-s     MIA   .192 In/Sec   .063 G-s     GIA   .034 In/Sec   .164 G-s     GIH   .044 In/Sec   .175 G-s							
OVERALL LEVEL     1K-20KHz       MOH     .066 In/Sec     .247 G-s       MIH     .161 In/Sec     .040 G-s       MIA     .192 In/Sec     .063 G-s       GIA     .034 In/Sec     .164 G-s       GIH     .044 In/Sec     .175 G-s		con			.400	III/ Sec	.078 G-3
MOH     .066 In/Sec     .247 G-s       MIH     .161 In/Sec     .040 G-s       MIA     .192 In/Sec     .063 G-s       GIA     .034 In/Sec     .164 G-s       GIH     .044 In/Sec     .175 G-s	STD3		- Stand	3	OVERAI	т теч <i>и</i> ет	-
MIH   .161 In/Sec   .040 G-s     MIA   .192 In/Sec   .063 G-s     GIA   .034 In/Sec   .164 G-s     GIH   .044 In/Sec   .175 G-s		MOH					
MIA     .192 In/Sec     .063 G-s       GIA     .034 In/Sec     .164 G-s       GIH     .044 In/Sec     .175 G-s						•	
GIA .034 In/Sec .164 G-s GIH .044 In/Sec .175 G-s						•	
GIH .044 In/Sec .175 G-s						•	
						•	
.170 IN/Sec .043 G-S							
		COR			.170	111/ 260	.043 G-S

		OVERALL LEV	
	MOH	.059 In/Se	
	MIH	.085 In/Se	
	MIA	.074 In/Se	
	GIA	.073 In/Se	
	GIH	.062 In/Se	
	СОН	.193 In/Se	.022 G-s
STD5	- Stand S		(17-Sep-20)
		OVERALL LEV	
	MOH	.055 In/Se	
	MIH MIA	.068 In/Se .100 In/Se	
	GIA	.080 In/Se	
	GIH	.049 In/Se	
	GOH	.142 In/Se	
	COH	.639 In/Se	
	com	.059 11756	
STD6	- Stand (	6	(17-Sep-20)
		OVERALL LEV	
	MOH	.046 In/Se	
	MIH	.040 In/Se	
	MIA	.105 In/Se	
	GIA		.0045 G-s
	GIH	.035 In/Se	
	GOH	.180 In/Se	
	СОН	.256 In/Se	c .031 G-s
STD7	- Stand '	7	(17-Sep-20)
		OVERALL LEV	-
	MOH	.044 In/Se	c .134 G-s
	MIH	.058 In/Se	c .105 G-s
	MIA	.051 In/Se	
	GIA	.042 In/Se	c .011 G-s
	GIH	.030 In/Se	c .013 G-s
	GOH	.125 In/Se	c .064 G-s
	СОН	.383 In/Se	c .107 G-s
STD8	- Stand 8	3	(17-Sep-20)
		OVERALL LEV	-
	MOH	.037 In/Se	
	MIH	.042 In/Se	c .161 G-s
	MIA	.050 In/Se	
	GIA	.058 In/Se	
	GIH	.050 In/Se	
	СОН	.167 In/Se	c .078 G-s
STD9	- Stand S	9	(17-Sep-20)
		OVERALL LEV	EL 1K-20KHz
	MOH	.047 In/Se	.027 G-s
	MIH	.105 In/Se	c .117 G-s
	MIA	.062 In/Se	c .036 G-s
	GIA	.125 In/Se	
	GIH	.059 In/Se	
	СОН	.197 In/Se	c .060 G-s
STD10	- Stand 1	10	(17-Sep-20)
		OVERALL LEV	EL 1K-20KHz
	MOH	.029 In/Se	.042 G-s
	MIH	.039 In/Se	.030 G-s
	MIA	.036 In/Se	.022 G-s
	GIA	.058 In/Se	
	GIH	.040 In/Se	
	СОН	.084 In/Se	
STD11	- Stand 1	11	(17-Sep-20)
STDIT	- stand.		(17-Sep-20) EL 1K-20KHz
	МОН	.030 In/Se	
	MUH	.030 IN/Se	
	MIA	.055 IN/Se	

	073		
	GIA	.073 In/Sec	.044 G-s
	GIH	.054 In/Sec	
	GOH	.039 In/Sec	.116 G-s
	СОН	.119 In/Sec	.025 G-s
omo 1 0			
STD12	- Stand 12	•	7-Sep-20)
	МОН	OVERALL LEVEL .021 In/Sec	IN-ZUNHZ
	MIH	.034 In/Sec	.038 G-s .081 G-s
	MIA		.144 G-s
	СОН	.040 In/Sec .124 In/Sec	.055 G-s
STD13	- Stand 13	(17	7-Sep-20)
		OVERALL LEVEL	
	MOH	.077 In/Sec	.205 G-s
	MIH	.107 In/Sec	.400 G-s
	MIA	.097 In/Sec	.139 G-s
	GIA	.063 In/Sec	
	GIH	.051 In/Sec .046 In/Sec	.093 G-s .252 G-s
	GOH COH	.046 In/Sec .378 In/Sec	.252 G-s .610 G-s
	СОН	.378 IN/Sec	.010 G-S
NORTH A	C - NORTH ATR COM	IPRESSOR QUINCY (17	7-Sep-20)
n		OVERALL LEVEL	
	МОН	.123 In/Sec	.159 G-s
	МІН	.125 In/Sec	.384 G-s
	MIA	.204 In/Sec	.096 G-s
		OVERALL LEVEL	
	CIA	.247 In/Sec	.456 G-s
	CIH	.221 In/Sec .182 In/Sec	.557 G-s
	СОН	.182 In/Sec	.595 G-s
		DDESCOD OUTNOY (1	7 Com 20)
SOUTH A	C - SOUTH AIR COM	IPRESSOR QUINCY (17 OVERALL LEVEL	
	MOH	.060 In/Sec	
	MIH	.112 In/Sec	.395 G-s
			.397 G-s
	MIA	.098 In/Sec	
	MIA	.098 In/Sec OVERALL LEVEL	1K-20KHz
	MIA CIA	.098 In/Sec OVERALL LEVEL .185 In/Sec	1K-20KHz .569 G-s
		OVERALL LEVEL .185 In/Sec .128 In/Sec	1K-20KHz .569 G-s .380 G-s
	CIA	OVERALL LEVEL .185 In/Sec	1K-20KHz .569 G-s
	CIA CIH COH Database: nucorj	OVERALL LEVEL .185 In/Sec .128 In/Sec .174 In/Sec a9.rbm	1K-20KHz .569 G-s .380 G-s
	СІА СІН СОН	OVERALL LEVEL .185 In/Sec .128 In/Sec .174 In/Sec a9.rbm Hill Utilities	1K-20KHz .569 G-s .380 G-s .497 G-s
MEASURE	CIA CIH COH Database: nucorj Station: Roll M EMENT POINT	OVERALL LEVEL .185 In/Sec .128 In/Sec .174 In/Sec a9.rbm Hill Utilities OVERALL LEVEL	1K-20KHz .569 G-s .380 G-s .497 G-s HFD / VHFD
MEASURE	CIA CIH COH Database: nucorj Station: Roll M	OVERALL LEVEL .185 In/Sec .128 In/Sec .174 In/Sec a9.rbm Hill Utilities	1K-20KHz .569 G-s .380 G-s .497 G-s
MEASURE	CIA CIH COH Database: nucorj Station: Roll M EMENT POINT	OVERALL LEVEL .185 In/Sec .128 In/Sec .174 In/Sec a9.rbm Hill Utilities OVERALL LEVEL	1K-20KHz .569 G-s .380 G-s .497 G-s HFD / VHFD
MEASURE	CIA CIH COH Database: nucorj Station: Roll M EMENT POINT	OVERALL LEVEL .185 In/Sec .128 In/Sec .174 In/Sec a9.rbm Mill Utilities OVERALL LEVEL 	1K-20KHz .569 G-s .380 G-s .497 G-s HFD / VHFD 
MEASURE	CIA CIH COH Database: nucorj Station: Roll M EMENT POINT	OVERALL LEVEL .185 In/Sec .128 In/Sec .174 In/Sec a9.rbm Hill Utilities OVERALL LEVEL 	1K-20KHz .569 G-s .380 G-s .497 G-s HFD / VHFD  7-Sep-20) 1K-20KHz
MEASURE  HYDPMP2	CIA CIH COH Database: nucorj Station: Roll M EMENT POINT  P - Hydraulic Pum	OVERALL LEVEL .185 In/Sec .128 In/Sec .174 In/Sec a9.rbm Mill Utilities OVERALL LEVEL 	1K-20KHz .569 G-s .380 G-s .497 G-s HFD / VHFD  7-Sep-20) 1K-20KHz .317 G-s
MEASURE  HYDPMP2	CIA CIH COH Database: nucorj Station: Roll M EMENT POINT 	OVERALL LEVEL .185 In/Sec .128 In/Sec .174 In/Sec a9.rbm Mill Utilities OVERALL LEVEL 	1K-20KHz .569 G-s .380 G-s .497 G-s HFD / VHFD  7-Sep-20) 1K-20KHz .317 G-s
MEASURE  HYD PMP2	CIA CIH COH Database: nucorj Station: Roll M EMENT POINT 	OVERALL LEVEL .185 In/Sec .128 In/Sec .174 In/Sec a9.rbm Mill Utilities OVERALL LEVEL 	1K-20KHz .569 G-s .380 G-s .497 G-s HFD / VHFD  7-Sep-20) 1K-20KHz .317 G-s .164 G-s .938 G-s
MEASURE  HYD PMP2	CIA CIH COH Database: nucorj Station: Roll M EMENT POINT 	OVERALL LEVEL .185 In/Sec .128 In/Sec .174 In/Sec a9.rbm Hill Utilities OVERALL LEVEL .0VERALL LEVEL .151 In/Sec .365 In/Sec .270 In/Sec DP West (17)	1K-20KHz .569 G-s .380 G-s .497 G-s HFD / VHFD  7-Sep-20) 1K-20KHz .317 G-s .164 G-s .938 G-s
MEASURE  HYD PMP2	CIA CIH COH Database: nucorj Station: Roll M EMENT POINT 	OVERALL LEVEL .185 In/Sec .128 In/Sec .174 In/Sec a9.rbm Mill Utilities OVERALL LEVEL .0VERALL LEVEL .151 In/Sec .365 In/Sec .270 In/Sec mp West (17) OVERALL LEVEL	1K-20KHz .569 G-s .380 G-s .497 G-s HFD / VHFD  7-Sep-20) 1K-20KHz .317 G-s .164 G-s .938 G-s 7-Sep-20) 1K-20KHz
MEASURE  HYDPMP2 HYDPMP3	CIA CIH COH Database: nucorj Station: Roll M EMENT POINT 	OVERALL LEVEL .185 In/Sec .128 In/Sec .174 In/Sec a9.rbm Mill Utilities OVERALL LEVEL .0VERALL LEVEL .151 In/Sec .365 In/Sec .270 In/Sec OVERALL LEVEL .072 In/Sec	1K-20KHz .569 G-s .380 G-s .497 G-s HFD / VHFD  7-Sep-20) 1K-20KHz .317 G-s .164 G-s .938 G-s 7-Sep-20) 1K-20KHz .380 G-s
MEASURE  HYDPMP2 HYDPMP3	CIA CIH COH Database: nucorj Station: Roll M EMENT POINT 	OVERALL LEVEL .185 In/Sec .128 In/Sec .174 In/Sec a9.rbm Hill Utilities OVERALL LEVEL .0VERALL LEVEL .151 In/Sec .365 In/Sec .270 In/Sec .072 In/Sec .239 In/Sec	1K-20KHz .569 G-s .380 G-s .497 G-s HFD / VHFD  7-Sep-20) 1K-20KHz .317 G-s .164 G-s .938 G-s 7-Sep-20) 1K-20KHz .380 G-s .810 G-s
MEASURE  HYDPMP2 HYDPMP3	CIA CIH COH Database: nucorj Station: Roll M EMENT POINT 	OVERALL LEVEL .185 In/Sec .128 In/Sec .174 In/Sec a9.rbm Mill Utilities OVERALL LEVEL .0VERALL LEVEL .151 In/Sec .365 In/Sec .270 In/Sec OVERALL LEVEL .072 In/Sec	1K-20KHz .569 G-s .380 G-s .497 G-s HFD / VHFD  7-Sep-20) 1K-20KHz .317 G-s .164 G-s .938 G-s 7-Sep-20) 1K-20KHz .380 G-s .810 G-s
MEASURE  HYDPMP2 HYDPMP3	CIA CIH COH Database: nucorj Station: Roll M EMENT POINT 	OVERALL LEVEL .185 In/Sec .128 In/Sec .174 In/Sec a9.rbm Mill Utilities OVERALL LEVEL .0VERALL LEVEL .151 In/Sec .365 In/Sec .270 In/Sec .239 In/Sec .210 In/Sec	1K-20KHz .569 G-s .380 G-s .497 G-s HFD / VHFD  7-Sep-20) 1K-20KHz .317 G-s .164 G-s .938 G-s .938 G-s .810 G-s .457 G-s
MEASURE  HYDPMP2 HYDPMP3	CIA CIH COH Database: nucorj Station: Roll M EMENT POINT 	OVERALL LEVEL .185 In/Sec .128 In/Sec .128 In/Sec .174 In/Sec a9.rbm Hill Utilities OVERALL LEVEL .0VERALL LEVEL .151 In/Sec .365 In/Sec .270 In/Sec .239 In/Sec .210 In/Sec .210 In/Sec	1K-20KHz .569 G-s .380 G-s .497 G-s HFD / VHFD  7-Sep-20) 1K-20KHz .317 G-s .164 G-s .938 G-s .938 G-s .810 G-s .457 G-s 7-Sep-20)
MEASURE  HYDPMP2 HYDPMP3 DESFAN	CIA CIH COH Database: nucorj Station: Roll M EMENT POINT - Hydraulic Pum MOH MIH PIV - Hydraulic Pum MOH MIH PIV - Desolution Fa	OVERALL LEVEL .185 In/Sec .128 In/Sec .128 In/Sec .174 In/Sec a9.rbm Hill Utilities OVERALL LEVEL .0VERALL LEVEL .151 In/Sec .365 In/Sec .270 In/Sec .239 In/Sec .210 In/Sec .210 In/Sec	1K-20KHz .569 G-s .380 G-s .497 G-s HFD / VHFD  7-Sep-20) 1K-20KHz .317 G-s .164 G-s .938 G-s .938 G-s .810 G-s .457 G-s 7-Sep-20)
MEASURE  HYDPMP2 HYDPMP3 DESFAN	CIA CIH COH Database: nucorj Station: Roll M EMENT POINT - Hydraulic Pum MOH MIH PIV - Hydraulic Pum MOH MIH PIV - Desolution Fa MOH	OVERALL LEVEL .185 In/Sec .128 In/Sec .128 In/Sec .174 In/Sec a9.rbm Mill Utilities OVERALL LEVEL .0VERALL LEVEL .151 In/Sec .365 In/Sec .270 In/Sec .239 In/Sec .210 In/Sec .210 In/Sec .210 In/Sec	1K-20KHz .569 G-s .380 G-s .497 G-s HFD / VHFD  7-Sep-20) 1K-20KHz .317 G-s .164 G-s .938 G-s .938 G-s .810 G-s .810 G-s .457 G-s 7-Sep-20) 1K-20KHz .380 G-s
MEASURE  HYDPMP2 HYDPMP3 DESFAN	CIA CIH COH Database: nucorj Station: Roll M EMENT POINT - Hydraulic Pum MOH MIH PIV - Hydraulic Pum MOH MIH PIV - Desolution Fa	OVERALL LEVEL .185 In/Sec .128 In/Sec .128 In/Sec .174 In/Sec a9.rbm Hill Utilities OVERALL LEVEL .0VERALL LEVEL .151 In/Sec .365 In/Sec .270 In/Sec .239 In/Sec .210 In/Sec .210 In/Sec	1K-20KHz .569 G-s .380 G-s .497 G-s HFD / VHFD  7-Sep-20) 1K-20KHz .317 G-s .164 G-s .938 G-s .938 G-s .810 G-s .810 G-s .457 G-s 7-Sep-20) 1K-20KHz .380 G-s
MEASURE  HYDPMP2 HYDPMP3 DESFAN	CIA CIH COH Database: nucorj Station: Roll M EMENT POINT - Hydraulic Pur MOH MIH PIV - Hydraulic Pur MOH MIH PIV - Desolution Fa MOH MIH	OVERALL LEVEL .185 In/Sec .128 In/Sec .128 In/Sec .174 In/Sec a9.rbm Hill Utilities OVERALL LEVEL .0VERALL LEVEL .151 In/Sec .365 In/Sec .270 In/Sec .239 In/Sec .210 In/Sec .210 In/Sec .038 In/Sec .037 In/Sec	1K-20KHz .569 G-s .380 G-s .497 G-s HFD / VHFD  7-Sep-20) 1K-20KHz .317 G-s .164 G-s .938 G-s .938 G-s .810 G-s .810 G-s .457 G-s 7-Sep-20) 1K-20KHz .380 G-s .038 G-s .038 G-s
MEASURE  HYD PMP2 HYD PMP3 DESFAN	CIA CIH COH Database: nucorj Station: Roll M EMENT POINT - Hydraulic Pur MOH MIH PIV - Hydraulic Pur MOH MIH PIV - Desolution Fa MOH MIH	OVERALL LEVEL .185 In/Sec .128 In/Sec .128 In/Sec .174 In/Sec a9.rbm Hill Utilities OVERALL LEVEL .0VERALL LEVEL .151 In/Sec .365 In/Sec .270 In/Sec .239 In/Sec .210 In/Sec .210 In/Sec .038 In/Sec .037 In/Sec .174 In/Sec	1K-20KHz .569 G-s .380 G-s .497 G-s HFD / VHFD  7-Sep-20) 1K-20KHz .317 G-s .164 G-s .938 G-s .938 G-s .810 G-s .810 G-s .457 G-s 7-Sep-20) 1K-20KHz .380 G-s .038 G-s .038 G-s .038 G-s
MEASURE  HYD PMP2 HYD PMP3 DESFAN COMFAN	CIA CIH COH Database: nucorj Station: Roll M EMENT POINT - Hydraulic Pur MOH MIH PIV - Hydraulic Pur MOH MIH PIV - Desolution Fa MOH MIH	OVERALL LEVEL .185 In/Sec .128 In/Sec .128 In/Sec .174 In/Sec a9.rbm Hill Utilities OVERALL LEVEL .0VERALL LEVEL .151 In/Sec .365 In/Sec .270 In/Sec .239 In/Sec .210 In/Sec .210 In/Sec .038 In/Sec .037 In/Sec	1K-20KHz .569 G-s .380 G-s .497 G-s HFD / VHFD  7-Sep-20) 1K-20KHz .317 G-s .164 G-s .938 G-s .938 G-s .810 G-s .810 G-s .457 G-s 7-Sep-20) 1K-20KHz .038 G-s .038 G-s .038 G-s .038 G-s

MI	A		.140	In/Sec	.113 (	G-s
FI	н		.070	in/sec	.24/ 0	3-s
FO	H		.119	In/Sec	1.783 (	3-s
EJCFAN	- E	Ejector Air	Fan		(17-Sep-20)	
		2			1K-20K	
MO	н		.044	In/Sec	.180 (	G-s
MI	н		.047	In/Sec In/Sec	.664 (	3-s
MI	A		.043	In/Sec	.436 (	3-s
FI	A				.967 (	
FI	н		.028	In/Sec	1.741 (	3-s
FO	H		.047	In/Sec	1.160 (	G−s
COLPMP2	- E	Furnace Cool	Ling Pump ce	enter	(17-Sep-20)	
			OVERAI	L LEVEL	1K-20K	Iz
MO	H				.172 (	
MI			.134	In/Sec	.548 (	G-s
MI	Α		.127	In/Sec	.029 (	3-s
FCTSOUTH	- E	Furnace CT I				
			OVERAI	L LEVEL	1K-20K	Iz
MO			.266	In/Sec	.086 (	3-s
MI	н				.057 (	
MI	Α		.356	In/Sec	.032 (	3-s
FCTNORTH	- E	Furnace CT I			-	
			OVERAI	L LEVEL	1K-20K	Iz
MO			.367	In/Sec	.073 ( .106 (	G-s
MI						
MI	A		.106	In/Sec	.071 (	3-s
SCLPMP2	- s	Scale Pit Pu				
			OVERAI	L LEVEL	1K-20K	Iz
MO			.233	In/Sec	.189 (	
MI			.171	In/Sec	.248 (	G-s
MI					.063	
PI	н		.117	In/Sec	.165 (	j-s
CTWTR2	- 0	CT Pump West			(17-Sep-20)	
			OVERAL	L LEVEL	1K-20K	Iz
MO			.140	In/Sec	.557	}-s
MI			.108	In/Sec	.301 0	
MI	A		.136	IN/Sec	.211 (	j−S
MILWTR3	- N	Mill Water H	-		-	
					1K-20K	
MO					.407 (	
MI			.049	In/Sec In/Sec	. 653 (	
MI	A		.030	In/Sec	.311 (	3-s
MILWTR1	- M	Mill Water H	-		-	
					1K-20K	
MO			.085	In/Sec	.257 (	3-s
MI			.039	In/Sec	.284 (	
MI	A		.037	In/Sec	.124 (	G-s
		Vibration U G-s RM				
		In/Sec Pi	-			
161	-	-11, 56C FI				

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

Sincerely,

Kerin W. Maxwell

ISO Certified Vibration Analyst, Category III



QualiTest Diagnostics Cell: 901-486-4565 Email: <u>kwilliam@gohispeed.com</u>