HI-SPEED INDUSTRIAL SERVICE

QualiTest® Diagnostics

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December 2, 2021

Harold Green
St. Jude Research Hospital
Memphis, TN

Harold,

The following is a summary of findings from the annual AHU vibration survey at B/L and 305 buildings.

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

BL Building

AHU 1

Motor drive end bearing data is still showing some bearing wear/defects present. Drive end fan bearing is also showing signs of possible lubrication issue. Inspect motor bearings for defects and wear and ensure fan bearings have adequate clean grease as scheduling allows. Also check belts and sheave alignment as time allows. Data shows some signs of belt/sheave issues too. Rated as a **CLASS II** defect.

AHU 2

Fan outboard (opposite drive end) bearing waveform data is still showing higher than normal acceleration amplitudes while spectral data indicates either defects are present in the bearing and/or lack of lubrication Inspect bearing as scheduling allows. Rated as a **CLASS II** defect.

RTU 3 SUPPLY

All vibration data is within acceptable limits. No action recommended at this time.

RTU 3 HEAT

All vibration data is within acceptable limits. No action recommended at this time.

305 Building

AHU 2 SUPPLY

All vibration data is within acceptable limits. No action recommended at this time.

AHU 3 SUPPLY

All vibration data is within acceptable limits. No action recommended at this time.

AHU 4 SUPPLY

Top and Bottom right motors have very high vibration. High 1 x rpm vibration along with visual inspection shows loose base fasteners. Springs are not set properly as well. All fasteners and springs need to be tightened and set properly ASAP. Rated as a **CLASS IV** defect.

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Abbreviated Last Measurement Summary
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               Database:  stjude~1.rbm
               Station:   B/L


        MEASUREMENT POINT                    OVERALL LEVEL       HFD / VHFD
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   AHU 1 SF   - AHU 1 SF                     (01-Dec-21)
                                              OVERALL LEVEL     1 - 20 KHz
   MOH - MOTOR OUTBOARD HORIZONTAL              .249 In/Sec       .747 G-s
   MIH - MOTOR INBOARD HORIZONTAL               .233 In/Sec      1.203 G-s
   MIA - MOTOR INBOARD AXIAL                    .413 In/Sec       .383 G-s
   FIA - FAN INBOARD AXIAL                      .325 In/Sec       .542 G-s
   FIH - FAN INBOARD HORIZONTAL                 .238 In/Sec       .979 G-s
   FOH - FAN OUTBOARD HORIZONTAL                .286 In/Sec      1.534 G-s

   AHU 2 SF   - AHU 2 SF                     (01-Dec-21)
                                              OVERALL LEVEL     1 - 20 KHz
   MOH - MOTOR OUTBOARD HORIZONTAL              .130 In/Sec       .279 G-s
   MIH - MOTOR INBOARD HORIZONTAL               .151 In/Sec       .653 G-s
   MIA - MOTOR INBOARD AXIAL                    .509 In/Sec       .437 G-s
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	FIA - FAN INBOARD AXIAL	.304 In/Sec	.694 G-s
	FIH - FAN INBOARD HORIZONTAL	.380 In/Sec	1.038 G-s
	FOH - FAN OUTBOARD HORIZONTAL	.471 In/Sec	2.082 G-s
	RTU 3 SF - RTU 3 SUPPLY	(01-Dec-21)	
		OVERALL LEVEL	1 - 20 KHz
	AOH - MOTOR A OUTBOARD HORIZONTAL	.136 In/Sec	.573 G-s
	AIH - MOTOR A INBOARD HORIZONTAL	.066 In/Sec	1.782 G-s
	AOA - MOTOR A OUTBOARD AXIAL	.237 In/Sec	.104 G-s
	BOA - MOTOR B OUTBOARD AXIAL	.137 In/Sec	.122 G-s
	BOH - MOTOR B OUTBOARD HORIZONTAL	.094 In/Sec	.655 G-s
	BIH - MOTOR B INBOARD HORIZONTAL	.066 In/Sec	1.113 G-s
	RTU 3 HEAT - RTU 3 HEAT	(01-Dec-21)	
		OVERALL LEVEL	1 - 20 KHz
	MOH - MOTOR OUTBOARD HORIZONTAL	.215 In/Sec	.238 G-s
	MIH - MOTOR INBOARD HORIZONTAL	.222 In/Sec	.525 G-s
	MIA - MOTOR INBOARD AXIAL	.203 In/Sec	.154 G-s
*	FIH - FAN INBOARD HORIZONTAL	.228 In/Sec	.133 G-s
*	FOH - FAN OUTBOARD HORIZONTAL	.208 In/Sec	.185 G-s

Station: 305

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
AHU 3 S - AHU 3 SUPPLY	(01-Dec-21)	
	OVERALL LEVEL	1 - 20 KHz
1OH - TOP LEFT MOTOR OUTBOARD HORIZ	.101 In/Sec	.048 G-s
1IH - TOP LEFT MOTOR 1 INBOARD HORIZ	.051 In/Sec	.079 G-s
2OH - BOTTOM LEFT MOTOR OUTBOARD HORIZ	.510 In/Sec	.077 G-s
2IH - BOTTOM LEFT MOTOR INBOARD HORIZ	.200 In/Sec	.128 G-s
3IH - BOTTOM RIGHT MOTOR INBOARD HORIZ	.103 In/Sec	.079 G-s
4IH - TOP RIGHT MOTOR INBOARD HORIZ	.037 In/Sec	.059 G-s
AHU 4 S - AHU 4 SUPPLY	(01-Dec-21)	
	OVERALL LEVEL	1 - 20 KHz
1OH - TOP LEFT MOTOR INBOARD HORIZ	.047 In/Sec	.044 G-s
1IH - TOP LEFT MOTOR INBOARD HORIZ	.075 In/Sec	.041 G-s
2OH - BOTTOM LEFT MOTOR OUTBOARD HORIZ	.129 In/Sec	.068 G-s
2IH - BOTTOM LEFT MOTOR INBOARD HORIZ	.048 In/Sec	.077 G-s
3IH - BOTTOM RIGHT MOTOR NBOARD HORIZ	.417 In/Sec	.163 G-s
4IH - TOP RIGHT MOTOR INBOARD HORIZ	.756 In/Sec	.216 G-s
AHU 2 S - AHU 2 SUPPLY	(01-Dec-21)	
	OVERALL LEVEL	1 - 20 KHz
1OH - TOP LEFT MOTOR OUTBOARD HORIZ	.043 In/Sec	.115 G-s
1IH - TOP LEFT MOTOR INBOARD HORIZ	.152 In/Sec	.131 G-s
2OH - BOTTOM LEFT MOTOR OUTBOARD HORIZ	.067 In/Sec	.195 G-s
2IH - BOTTOM LEFT MOTOR INBOARD HORIZ	.073 In/Sec	.213 G-s
3IH - BOTTOM RIGHT MOTOR INBOARD HORIZ	.112 In/Sec	.138 G-s
4IH - TOP RIGHT MOTOR INBOARD HORIZ	.144 In/Sec	.193 G-s

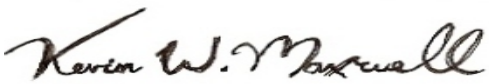
Clarification Of Vibration Units:

Acc --> G-s RMS

Vel --> In/Sec PK

As always, it has been a pleasure to serve St. Jude Research Hospital. If there are any comments or questions, do not hesitate to contact us.

Sincerely,



ISO Certified Vibration Analyst, Category III

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