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

December 13, 2021

St Jude KRCC
Memphis TN

The following is a summary of findings from the annual KRCC AHU and EF vibration survey at your facility. Please let us know if there are any questions or comments.

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

KRCC AHU

AHU8 SF A
All collected vibration data is within acceptable limits. No action required at this time.

AHU8 SF B
All collected vibration data is within acceptable limits. No action required at this time.

AHU8 SF C
All collected vibration data is within acceptable limits. No action required at this time.

AHU8 SF D
All collected vibration data is within acceptable limits. No action required at this time.

AHU8 RF A
All collected vibration data is within acceptable limits. No action required at this time.

AHU8 RF B
All collected vibration data is within acceptable limits. No action required at this time.

AHU8 RF C
All collected vibration data is within acceptable limits. No action required at this time.

AHU8 RF D
All collected vibration data is within acceptable limits. No action required at this time.

AHU9 SF A
All collected vibration data is within acceptable limits. No action required at this time.

AHU9 SF B
Motor vibration data indicates possible electrical fluting present in the motor bearings. Amplitudes are increasing each survey and should be repaired or replaced as scheduling allows. Ensure new motor has a grounding mechanism such as an Aegis Grounding Ring on the DE and insulated ODE bearing. Rated as a **CLASS II** defect.

AHU9 SF C
Motor vibration data indicates possible electrical fluting present in the motor bearings. Rated as a **CLASS II** defect.

AHU9 SF D
All collected vibration data is within acceptable limits. No action required at this time.

AHU9 RF A
All collected vibration data is within acceptable limits. No action required at this time.

AHU9 RF B
All collected vibration data is within acceptable limits. No action required at this time.

AHU9 RF C
All collected vibration data is within acceptable limits. No action required at this time.

AHU9 RF D
All collected vibration data is within acceptable limits. No action required at this time.

AHU10 SF A
All collected vibration data is within acceptable limits. No action required at this time.

AHU10 SF B
All collected vibration data is within acceptable limits. No action required at this time.

AHU10 SF C
All collected vibration data is within acceptable limits. No action required at this time.

AHU10 SF D
All collected vibration data is within acceptable limits. No action required at this time.

AHU10 RF A
All collected vibration data is within acceptable limits. No action required at this time.

AHU10 RF B
All collected vibration data is within acceptable limits. No action required at this time.

AHU11 SF A
All collected vibration data is within acceptable limits. No action required at this time.

AHU11 SF B
All collected vibration data is within acceptable limits. No action required at this time.

AHU11 SF C
All collected vibration data is within acceptable limits. No action required at this time.

AHU11 RF A
All collected vibration data is within acceptable limits. No action required at this time.

AHU11 RF B
All collected vibration data is within acceptable limits. No action required at this time.

AHU11 RF C
All collected vibration data is within acceptable limits. No action required at this time.

KRCC EF

SF 16
All vibration data is within acceptable limits. No action recommended at this time.

SF 17
All vibration data is within acceptable limits. No action recommended at this time.

EF 17
All vibration data is within acceptable limits. No action recommended at this time.

EF 18
All vibration data is within acceptable limits. No action recommended at this time.

EF 21
All vibration data is within acceptable limits. No action recommended at this time.

EF 23
All vibration data is within acceptable limits. No action recommended at this time.

EF 28
All vibration data is within acceptable limits. No action recommended at this time.

EF 29
All vibration data is within acceptable limits. No action recommended at this time.

EF 30
All vibration data is within acceptable limits. No action recommended at this time.

EF 31
Unit was not accessible this survey.

EF 32
Unit was not accessible this survey.

EF 32B
Unit was not accessible this survey.

EF 33
All vibration data is within acceptable limits. No action recommended at this time.

EF 34
All vibration data is within acceptable limits. No action recommended at this time.

EF 35
All vibration data is within acceptable limits. No action recommended at this time.

EF 36
All vibration data is within acceptable limits. No action recommended at this time.

EF 37
All vibration data is within acceptable limits. No action recommended at this time.

EF 38
All vibration data is within acceptable limits. No action recommended at this time.

EF 39
All vibration data is within acceptable limits. No action recommended at this time.

Abbreviated Last Measurement Summary

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Database: stjude~1.rbm
Station: KRCC

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
AHU8SFA - AHU 8 SF A	(13-Dec-21)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.069 In/Sec	.415 G-s
MIH	.172 In/Sec	1.164 G-s
MIA	.125 In/Sec	1.024 G-s
AHU8SFB - AHU 8 SF B	(13-Dec-21)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.068 In/Sec	.366 G-s
MIH	.080 In/Sec	.502 G-s
MIA	.127 In/Sec	.359 G-s
AHU8SFC - AHU 8 SF C	(13-Dec-21)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.068 In/Sec	.635 G-s
MIH	.108 In/Sec	1.236 G-s
MIA	.101 In/Sec	.724 G-s
AHU8SFD - AHU 8 SF D	(13-Dec-21)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.111 In/Sec	.340 G-s
MIH	.109 In/Sec	.507 G-s
MIA	.151 In/Sec	.376 G-s
AHU8RFA - AHU 8 RF A	(13-Dec-21)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.063 In/Sec	.234 G-s
MIH	.057 In/Sec	.248 G-s
MIA	.040 In/Sec	.158 G-s
AHU8RFB - AHU 8 RF B	(13-Dec-21)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.061 In/Sec	.158 G-s
MIH	.054 In/Sec	.217 G-s
MIA	.063 In/Sec	.223 G-s
AHU8RFC - AHU 8 RF C	(13-Dec-21)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.124 In/Sec	.087 G-s
MIH	.119 In/Sec	.197 G-s
MIA	.076 In/Sec	.084 G-s
AHU8RFD - AHU 8 RF D	(13-Dec-21)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.053 In/Sec	.159 G-s
MIH	.062 In/Sec	.325 G-s
MIA	.048 In/Sec	.141 G-s
AHU9SFA - AHU 9 SF A	(13-Dec-21)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.082 In/Sec	.626 G-s
MIH	.130 In/Sec	.674 G-s
MIA	.228 In/Sec	.356 G-s
AHU9SFB - AHU 9 SF B	(13-Dec-21)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.139 In/Sec	.811 G-s
MIH	.332 In/Sec	2.013 G-s
MIA	.177 In/Sec	.335 G-s

AHU9SFC	- AHU 9 SF C	(13-Dec-21)	
		OVERALL LEVEL	1 - 20 KHz
	MOH	.127 In/Sec	.604 G-s
	MIH	.098 In/Sec	.843 G-s
	MIA	.151 In/Sec	.605 G-s
AHU9SFD	- AHU 9 SF D	(13-Dec-21)	
		OVERALL LEVEL	1 - 20 KHz
	MOH	.140 In/Sec	.604 G-s
	MIH	.092 In/Sec	.555 G-s
	MIA	.159 In/Sec	.378 G-s
AHU9RFA	- AHU 9 RF A	(13-Dec-21)	
		OVERALL LEVEL	1 - 20 KHz
	MOH	.238 In/Sec	.293 G-s
	MIH	.196 In/Sec	.627 G-s
	MIA	.171 In/Sec	.516 G-s
AHU9RFB	- AHU 9 RF B	(13-Dec-21)	
		OVERALL LEVEL	1 - 20 KHz
	MOH	.094 In/Sec	.683 G-s
	MIH	.060 In/Sec	.617 G-s
	MIA	.099 In/Sec	.339 G-s
AHU9RFC	- AHU 9 RF C	(13-Dec-21)	
		OVERALL LEVEL	1 - 20 KHz
	MOH	.056 In/Sec	.429 G-s
	MIH	.079 In/Sec	.556 G-s
	MIA	.079 In/Sec	.370 G-s
AHU9RFD	- AHU 9 RF D	(13-Dec-21)	
		OVERALL LEVEL	1 - 20 KHz
	MOH	.065 In/Sec	.463 G-s
	MIH	.068 In/Sec	.746 G-s
	MIA	.125 In/Sec	.415 G-s
AHU10SFA	- AHU10 SF A	(13-Dec-21)	
		OVERALL LEVEL	1 - 20 KHz
	MOH	.145 In/Sec	.458 G-s
	MIH	.180 In/Sec	1.504 G-s
	MIA	.211 In/Sec	.690 G-s
AHU10SFB	- AHU10 SF B	(13-Dec-21)	
		OVERALL LEVEL	1 - 20 KHz
	MOH	.037 In/Sec	.642 G-s
	MIH	.087 In/Sec	.918 G-s
	MIA	.187 In/Sec	.601 G-s
AHU10SFC	- AHU10 SF C	(13-Dec-21)	
		OVERALL LEVEL	1 - 20 KHz
	MOH	.075 In/Sec	.663 G-s
	MIH	.134 In/Sec	.919 G-s
	MIA	.091 In/Sec	.635 G-s
AHU10SFD	- AHU10 SF D	(13-Dec-21)	
		OVERALL LEVEL	1 - 20 KHz
	MOH	.119 In/Sec	.509 G-s
	MIH	.146 In/Sec	.468 G-s
	MIA	.212 In/Sec	.921 G-s
AHU10RFA	- AHU10 RF A	(13-Dec-21)	
		OVERALL LEVEL	1 - 20 KHz
	MOH	.048 In/Sec	.255 G-s
	MIH	.101 In/Sec	.321 G-s
	MIA	.082 In/Sec	.176 G-s
	FIH	.042 In/Sec	.346 G-s
	FOH	.076 In/Sec	.323 G-s
AHU10RFB	- AHU10 RF B	(13-Dec-21)	
		OVERALL LEVEL	1 - 20 KHz

	MOH	.087 In/Sec	.410 G-s
	MIH	.064 In/Sec	.438 G-s
	MIA	.105 In/Sec	.256 G-s
	FIH	.068 In/Sec	.409 G-s
	FOH	.102 In/Sec	.372 G-s

AHU11 SFA - AHU11 SFA (13-Dec-21)

OVERALL LEVEL	.065 In/Sec	1 - 20 KHz .212 G-s
MOH	.039 In/Sec	.248 G-s
MIH		

AHU11 SFB - AHU11 SFB (13-Dec-21)

OVERALL LEVEL	.055 In/Sec	1 - 20 KHz .138 G-s
MOH	.020 In/Sec	.237 G-s
MIH		

AHU11 SFC - AHU11 SFC (13-Dec-21)

OVERALL LEVEL	.091 In/Sec	1 - 20 KHz .162 G-s
MOH	.094 In/Sec	.281 G-s
MIH		

AHU11 RFA - AHU11 RFA (13-Dec-21)

OVERALL LEVEL	.072 In/Sec	1 - 20 KHz .122 G-s
MOH	.093 In/Sec	.147 G-s
MIH		

AHU11 RFB - AHU11 RFB (13-Dec-21)

OVERALL LEVEL	.098 In/Sec	1 - 20 KHz .181 G-s
MOH	.108 In/Sec	.200 G-s
MIH		

AHU11 RFC - AHU11 RFC (13-Dec-21)

OVERALL LEVEL	.117 In/Sec	1 - 20 KHz .121 G-s
MOH	.082 In/Sec	.103 G-s
MIH		

SF 17 - SF 17 (06-Dec-21)

OVERALL LEVEL	.161 In/Sec	1 - 20 KHz .103 G-s
MOH	.159 In/Sec	.144 G-s
MIH	.138 In/Sec	.254 G-s
MIA		

EF 18 - EF 18 (06-Dec-21)

OVERALL LEVEL	.175 In/Sec	1 - 20 KHz .782 G-s
MOH	.155 In/Sec	.417 G-s
MIH	.080 In/Sec	.349 G-s
MIA		

EF 21 - EF 21 (13-Dec-21)

OVERALL LEVEL	.144 In/Sec	1 - 20 KHz .061 G-s
MOH	.123 In/Sec	.042 G-s
MIH		

EF 23 - EF 23 (13-Dec-21)

OVERALL LEVEL	.151 In/Sec	1 - 20 KHz .277 G-s
MOH	.153 In/Sec	.320 G-s
MIH	.110 In/Sec	.104 G-s
MIA	.125 In/Sec	.239 G-s
FIA	.139 In/Sec	.345 G-s
FIH	.101 In/Sec	.256 G-s
FOH		

EF 28 - EF 28 (06-Dec-21)

OVERALL LEVEL	.074 In/Sec	1 - 20 KHz .265 G-s
MOH	.076 In/Sec	.213 G-s
MIH	.209 In/Sec	.137 G-s
MIA		

EF 29 - EF 29 (06-Dec-21)

OVERALL LEVEL		1 - 20 KHz

	MOH	.265 In/Sec	.539 G-s
	MIH	.246 In/Sec	.922 G-s
	MIA	.105 In/Sec	.365 G-s

EF 30	- EF 30	(13-Dec-21)	
		OVERALL LEVEL	1 - 20 KHz
	MOH	.061 In/Sec	.119 G-s
	MIH	.060 In/Sec	.089 G-s
	MIA	.089 In/Sec	.055 G-s
	FIH	.077 In/Sec	.038 G-s
	FOH	.073 In/Sec	.020 G-s

EF 33	- EF 33	(06-Dec-21)	
		OVERALL LEVEL	1 - 20 KHz
	MOH	.161 In/Sec	.200 G-s
	MIH	.198 In/Sec	.296 G-s
	MIA	.161 In/Sec	.347 G-s
	FIA	.241 In/Sec	.037 G-s
	FIH	.077 In/Sec	.055 G-s
	FOH	.095 In/Sec	.035 G-s

EF 34	- EF 34	(06-Dec-21)	
		OVERALL LEVEL	1 - 20 KHz
	MOH	.102 In/Sec	.271 G-s
	MIH	.118 In/Sec	.303 G-s
	MIA	.110 In/Sec	.722 G-s
	FIA	.225 In/Sec	.131 G-s
	FIH	.116 In/Sec	.086 G-s
	FOH	.096 In/Sec	.045 G-s

EF 35	- EF 35	(06-Dec-21)	
		OVERALL LEVEL	1 - 20 KHz
	MOH	.123 In/Sec	.256 G-s
	MIH	.100 In/Sec	.224 G-s
	MIA	.104 In/Sec	.230 G-s
	FIA	.146 In/Sec	.079 G-s
	FIH	.124 In/Sec	.079 G-s
	FOH	.192 In/Sec	.060 G-s

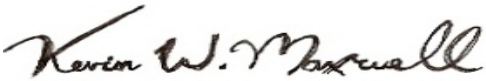
EF 37	- EF 37	(13-Dec-21)	
		OVERALL LEVEL	1 - 20 KHz
	MOH	.144 In/Sec	.448 G-s
	MIH	.174 In/Sec	.528 G-s
	MIA	.219 In/Sec	.292 G-s
	FIA	.166 In/Sec	.384 G-s
	FIH	.118 In/Sec	.483 G-s
	FOH	.190 In/Sec	.587 G-s

Clarification Of Vibration Units:

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

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

Sincerely,



ISO Certified Vibration Analyst, Category III

HI-SPEED INDUSTRIAL SERVICE

QualiTest® Diagnostics

kwilliam@gohispeed.com
901-486-4565