HI-SPEED INDUSTRIAL SERVICE

MILLINGTON, TN

November 6, 2019

Plaskolite

Subject: November vibration report

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.

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

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.

This completes our assessment of your equipment for this survey. Thank you for your business and don't hesitate to call if you have any comments or questions.

Sincerely,

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Data

Four of the route machines had vibrations at or above the 0.25”/sec Velocity peak threshold. Please find the vibration summary below:

Hot Water Pumps 1, 3, and 4 have overall vibrations above the threshold limit at 0.37, 0.38 and 0.44”/sec velocity peak respectfully. The vibrations consist of a shaft speed peak and what appears to be 1 or 2 resonant peaks in the spectrums. No immediate action is suggested at this time other than checking the fasteners. Trim balance or pump impeller inspection could be considered next. **Rated a Class I Defect.**

The West Syrup Cooling Pump is vibrating at what appears to be vane pass at 35.25 Hz.. The vibration amplitude has not changed much, but has just risen above the reporting threshold. We will keep a close eye on it going forward. **Rated a Class I Defect.**

Abbreviated Last Measurement Summary
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Database: mmaold.rbm
Station: PLASKOLITE MEMPHIS
Route No. 3: PLASKOLITE NEW
Report Date: 06-Nov-19 12:53

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
5285-09 - FAN,COOLING TWR WEST	(06-Nov-19)	
	OVERALL LEVEL	1-20 KHz
W1 - CELL FRAME -WEST END N-S DIR	.0091 In/Sec	.020 G-s
W2 - CELL FRAME -WEST END E-W DIR	.039 In/Sec	.030 G-s
5285-11 - FAN,COOLING TWR MIDDLE	(06-Nov-19)	
	OVERALL LEVEL	1-20 KHz
M1 - CELL FRAME -MIDDLE N-S DIR	.0056 In/Sec	.041 G-s
M2 - CELL FRAME -MIDDLE E-W DIR	.0073 In/Sec	.049 G-s
5285-12 - FAN,COOLING TWR EAST	(06-Nov-19)	
	OVERALL LEVEL	1-20 KHz
E1 - CELL FRAME -EAST END E-W DIR	.014 In/Sec	.010 G-s
	OVERALL LEVEL	HFD (>5 kHz)
E2 - CELL FRAME -EAST END N-S DIR	.0057 In/Sec	.0006 G-s
5285-21 - RETURN AIR FAN 100 AREA	(06-Nov-19)	
	OVERALL LEVEL	1-20 KHz
11 - MOTOR OUTBD HORIZ	.075 In/Sec	.027 G-s
21 - MOTOR INBD HORIZ	.087 In/Sec	.026 G-s
S1100 - FLARE BLOWER	(06-Nov-19)	

		OVERALL LEVEL	1-20 KHz
11	- MOTOR FLARE STACK END HORIZ	.010 In/Sec	.022 G-s
12	- MOTOR FLARE STACK END VERT	.0087 In/Sec	.023 G-s

5214-04 - EAST SYRUP COOL PUMP (06-Nov-19)

		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZONTAL	.034 In/Sec	.045 G-s
21	- MOTOR INBOARD HORIZONTAL	.039 In/Sec	.120 G-s
23	- MOTOR INBOARD AXIAL	.018 In/Sec	.092 G-s
31	- GEARBOX INPUT HORIZONTAL	.078 In/Sec	
61	- GEARBOX OUTPUT SHAFT HORIZ	.081 In/Sec	
71	- PUMP COUPLING END HORIZ	.063 In/Sec	.020 G-s
81	- PUMPIMPELLER END HORIZ	.039 In/Sec	.0047 G-s

5214-03 - MIDDLE SYRUP COOL PUMP (06-Nov-19)

		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZONTAL	.076 In/Sec	.099 G-s
21	- MOTOR INBOARD HORIZONTAL	.066 In/Sec	.096 G-s
23	- MOTOR INBOARD AXIAL	.092 In/Sec	.089 G-s
31	- GEARBOX INPUT HORIZONTAL	.130 In/Sec	
61	- GEARBOX OUTPUT SHAFT HORIZ	.117 In/Sec	
71	- PUMP COUPLING END HORIZ	.069 In/Sec	.014 G-s
81	- PUMP IMPELLER END HORIZ	.051 In/Sec	.024 G-s

5214-01 - WEST SYRUP COOL PUMP (06-Nov-19)

		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZONTAL	.075 In/Sec	.053 G-s
21	- MOTOR INBOARD HORIZONTAL	.067 In/Sec	.060 G-s
23	- MOTOR INBOARD AXIAL	.060 In/Sec	.029 G-s
31	- GEARBOX INPUT HORIZONTAL	.078 In/Sec	
61	- GEARBOX OUTPUT HORIZ	.101 In/Sec	
71	- PUMP CPLG END HORIZ	.202 In/Sec	.014 G-s
81	- PUMP IMPELLER END HORIZ	.252 In/Sec	.042 G-s

5282-02 - PUMP #1 HOT WATER 5282-02 (06-Nov-19)

		OVERALL LEVEL	1-20 KHz
11	- #1 Hot Water Pump Mtr Top N-S	.226 In/Sec	1.022 G-s
12	- #1 Hot Water Pump Mtr Top E-W	.369 In/Sec	.306 G-s

5282-04 - PUMP #3 HOT WATER 5282-04 (06-Nov-19)

		OVERALL LEVEL	1-20 KHz
11	- #3 Hot Water Pump Mtr Top N-S	.181 In/Sec	.373 G-s
12	- #3 Hot Water Pump Mtr Top E-W	.343 In/Sec	.282 G-s

5282-05 - PUMP #4 HOT WATER 5282-05 (06-Nov-19)

		OVERALL LEVEL	1-20 KHz
11	- #4 Hot Water Pump Mtr Top N-S	.177 In/Sec	.424 G-s
12	- #4 Hot Water Pump Mtr Top E-W	.444 In/Sec	.313 G-s

5283-01 - BLOWER, EDGE WATER REMOVAL (06-Nov-19)

		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZONTAL	.068 In/Sec	.124 G-s
21	- MOTOR INBOARD HORIZONTAL	.086 In/Sec	.026 G-s
23	- MOTOR AXIAL	.128 In/Sec	.094 G-s
71	- BLOWER COUPLING END HORIZONTAL	.102 In/Sec	.195 G-s
81	- BLOWER WHEEL END HORIZONTAL	.159 In/Sec	.180 G-s

5281-12 - BLOWER,SLOW COOLING (UPPER)	(06-Nov-19)		
	OVERALL LEVEL	1-20 KHz	
11 - MOTOR OUTBD HORIZ	.039 In/Sec	1.135 G-s	
21 - MOTOR INBD HORIZ	.042 In/Sec	1.909 G-s	
23 - MOTOR INBD AXIAL	.027 In/Sec	1.034 G-s	
71 - FAN INBD (ON PILLOWBLOCK FOOT)	.026 In/Sec	.148 G-s	
81 - FAN OUTBD (ON PILLOWBLOCK FOOT)	.032 In/Sec	.202 G-s	
5281-13 - BLOWER,SLOW COOLING (LOWER)	(06-Nov-19)		
	OVERALL LEVEL	1-20 KHz	
11 - MOTOR OUTBD HORIZ	.050 In/Sec	2.849 G-s	
21 - MOTOR INBD HORIZ	.097 In/Sec	1.346 G-s	
21H - MOTOR INBD HORIZ	.111 In/Sec		
23 - MOTOR INBD AXIAL	.095 In/Sec	1.517 G-s	
71 - FAN INBD (ON PILLOWBLOCK FOOT)	.019 In/Sec	.141 G-s	
81 - FAN OUTBD (ON PILLOWBLOCK FOOT)	.021 In/Sec	.132 G-s	
5281-14 - BLOWER,RAPID COOLING (UPPER)	(06-Nov-19)		
	OVERALL LEVEL	1-20 KHz	
11 - MOTOR OUTBD HORIZ	.042 In/Sec	.344 G-s	
21 - MOTOR INBD HORIZ	.066 In/Sec	.751 G-s	
23 - MOTOR INBD AXIAL	.029 In/Sec	.048 G-s	
71 - FAN INBD (ON PILLOWBLOCK FOOT)	.018 In/Sec	.154 G-s	
81 - FAN OUTBD (ON PILLOWBLOCK FOOT)	.016 In/Sec	.131 G-s	
5281-08 - BLOWER,RAPID COOLING (LOWER)	(06-Nov-19)		
	OVERALL LEVEL	1-20 KHz	
11 - MOTOR OUTBD HORIZ	.116 In/Sec	.991 G-s	
21 - MOTOR INBD HORIZ	.105 In/Sec	.743 G-s	
23 - MOTOR INBD AXIAL	.080 In/Sec	.516 G-s	
71 - FAN INBD (ON PILLOWBLOCK FOOT)	.025 In/Sec	.148 G-s	
81 - FAN OUTBD (ON PILLOWBLOCK FOOT)	.021 In/Sec	.140 G-s	
5281-10 - 200 BELT DRIVE, POLYMERIZER	(06-Nov-19)		
	OVERALL LEVEL	1-20 KHz	
11 - MOTOR OUTBOARD HORIZ	.034 In/Sec	.135 G-s	
21 - MOTOR INBD HORIZ	.032 In/Sec	.279 G-s	
33 - GEARBOX INPUT AXIAL	.0084 In/Sec	.025 G-s	
31 - GEARBOX INPUT HORIZ	.012 In/Sec	.077 G-s	
61 - GEARBOX OUTPUT HORIZ	.0062 In/Sec	.028 G-s	
71 - INBOARD PILLOWBLOCK	.0015 In/Sec	.0019 G-s	
81 - OUTBOARD PILLOWBLOCK	.0010 In/Sec	.0014 G-s	

Clarification Of Vibration Units:

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