HI-SPEED INDUSTRIAL SERVICE

MILLINGTON, TN

June 30, 2020

Plaskolite

Subject: June vibration report

Most of the machines surveyed were found to be in good condition, with 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

None of the route machines had vibrations at or above the 0.25”/sec velocity peak threshold.

Please note the following though:

The Cooling Upper and Lower Motor bearings have elevated acceleration in bearings. The motors were spinning slowly. We suspect the bearings are fluted from shaft currents. **Rated a Class I Defect.**

The tower roof fans on the vibration route could use some modifications. The return air fan (RAF-100) guards need to be modified so better data can be acquired directly from the motor and fan bearing housings. Currently it is fully enclosed. The flare blower mounted on the platform above should have a remote accelerometer installed for data collection to prevent analyst from getting stung by wasps during climbing and data collection.

Overall vibrations follow:

Abbreviated Last Measurement Summary

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Database: mmaold.rbm
Station: PLASKOLITE MEMPHIS
Route No. 3: PLASKOLITE NEW
Report Date: 30-Jun-20 09:58

	MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
5285-09	- FAN,COOLING TWR WEST	(26-Jun-20)	
		OVERALL LEVEL	1-20 KHz
W1	- CELL FRAME -WEST END N-S DIR	.016 In/Sec	.014 G-s
W2	- CELL FRAME -WEST END E-W DIR	.039 In/Sec	.043 G-s
5285-11	- FAN,COOLING TWR MIDDLE	(26-Jun-20)	
		OVERALL LEVEL	1-20 KHz
M1	- CELL FRAME -MIDDLE N-S DIR	.0087 In/Sec	.057 G-s
M2	- CELL FRAME -MIDDLE E-W DIR	.011 In/Sec	.094 G-s
5285-21	- RETURN AIR FAN 100 AREA	(26-Jun-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBD HORIZ	.079 In/Sec	.046 G-s
21	- MOTOR INBD HORIZ	.160 In/Sec	.040 G-s
* 23	- MOTOR INBD AXIAL	.027 In/Sec	.0047 G-s
71	- FAN INBD (ON FRAME UNDER BRG)	.093 In/Sec	.054 G-s
81	- FAN OUTBD (ON FRAME UNDER BRG)	.092 In/Sec	.049 G-s
S1100	- FLARE BLOWER	(26-Jun-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR FLARE STACK END HORIZ	.014 In/Sec	.019 G-s
12	- MOTOR FLARE STACK END VERT	.012 In/Sec	.019 G-s
13	- MOTOR FLARE STACK END AXIAL	.013 In/Sec	.019 G-s
* 21	- MOTOR DAMPER END HORIZ	.0087 In/Sec	.0082 G-s
* 22	- MOTOR DAMPER END VERT	.0081 In/Sec	.0089 G-s
* 23	- MOTOR DAMPER END AXIAL	.012 In/Sec	.0068 G-s
5214-04	- EAST SYRUP COOL PUMP	(26-Jun-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZONTAL	.027 In/Sec	.164 G-s
21	- MOTOR INBOARD HORIZONTAL	.032 In/Sec	.101 G-s
23	- MOTOR INBOARD AXIAL	.016 In/Sec	.212 G-s
31	- GEARBOX INPUT HORIZONTAL	.046 In/Sec	
61	- GEARBOX OUTPUT SHAFT HORIZ	.043 In/Sec	
71	- PUMP COUPLING END HORIZ	.109 In/Sec	.071 G-s
81	- PUMPIMPELLER END HORIZ	.051 In/Sec	.125 G-s
5214-03	- MIDDLE SYRUP COOL PUMP	(26-Jun-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZONTAL	.057 In/Sec	.080 G-s
21	- MOTOR INBOARD HORIZONTAL	.050 In/Sec	.087 G-s
23	- MOTOR INBOARD AXIAL	.056 In/Sec	.056 G-s
31	- GEARBOX INPUT HORIZONTAL	.115 In/Sec	
61	- GEARBOX OUTPUT SHAFT HORIZ	.096 In/Sec	
71	- PUMP COUPLING END HORIZ	.070 In/Sec	.0078 G-s

81	- PUMP IMPELLER END HORIZ	.077 In/Sec	.0062 G-s
5214-01	- WEST SYRUP COOL PUMP	(26-Jun-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZONTAL	.074 In/Sec	.033 G-s
21	- MOTOR INBOARD HORIZONTAL	.065 In/Sec	.125 G-s
23	- MOTOR INBOARD AXIAL	.085 In/Sec	.037 G-s
31	- GEARBOX INPUT HORIZONTAL	.082 In/Sec	
61	- GEARBOX OUTPUT HORIZ	.128 In/Sec	
71	- PUMP CPLG END HORIZ	.241 In/Sec	.172 G-s
81	- PUMP IMPELLER END HORIZ	.080 In/Sec	.146 G-s
5282-03	- PUMP #2 HOT WATER 5282-03	(26-Jun-20)	
		OVERALL LEVEL	1-20 KHz
11	- #2 Hot Water Pump Mtr Top N-S	.048 In/Sec	.573 G-s
12	- #2 Hot Water Pump Mtr Top E-W	.102 In/Sec	.410 G-s
5282-04	- PUMP #3 HOT WATER 5282-04	(26-Jun-20)	
		OVERALL LEVEL	1-20 KHz
11	- #3 Hot Water Pump Mtr Top N-S	.060 In/Sec	.378 G-s
12	- #3 Hot Water Pump Mtr Top E-W	.123 In/Sec	.379 G-s
5282-06	- PUMP #5 HOT WATER 5282-06	(26-Jun-20)	
		OVERALL LEVEL	1-20 KHz
11	- #5 Hot Water Pump Mtr Top N-S	.210 In/Sec	.581 G-s
12	- #5 Hot Water Pump Mtr Top E-W	.143 In/Sec	.319 G-s
5283-01	- BLOWER, EDGE WATER REMOVAL	(26-Jun-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZONTAL	.124 In/Sec	.055 G-s
21	- MOTOR INBOARD HORIZONTAL	.107 In/Sec	.090 G-s
23	- MOTOR AXIAL	.073 In/Sec	.162 G-s
71	- BLOWER COUPLING END HORIZONTAL	.055 In/Sec	.675 G-s
81	- BLOWER WHEEL END HORIZONTAL	.128 In/Sec	.342 G-s
5281-12	- BLOWER,SLOW COOLING (UPPER)	(26-Jun-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBD HORIZ	.035 In/Sec	.853 G-s
21	- MOTOR INBD HORIZ	.069 In/Sec	2.499 G-s
23	- MOTOR INBD AXIAL	.063 In/Sec	.696 G-s
71	- FAN INBD (ON PILLOWBLOCK FOOT)	.061 In/Sec	.132 G-s
81	- FAN OUTBD (ON PILLOWBLOCK FOOT)	.027 In/Sec	.168 G-s
5281-13	- BLOWER,SLOW COOLING (LOWER)	(26-Jun-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBD HORIZ	.085 In/Sec	.771 G-s
21	- MOTOR INBD HORIZ	.103 In/Sec	2.017 G-s
21H	- MOTOR INBD HORIZ	.089 In/Sec	
23	- MOTOR INBD AXIAL	.036 In/Sec	.121 G-s
71	- FAN INBD (ON PILLOWBLOCK FOOT)	.023 In/Sec	.068 G-s
* 81	- FAN OUTBD (ON PILLOWBLOCK FOOT)	.020 In/Sec	.109 G-s
5281-14	- BLOWER,RAPID COOLING (UPPER)	(26-Jun-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBD HORIZ	.054 In/Sec	.670 G-s
21	- MOTOR INBD HORIZ	.127 In/Sec	1.017 G-s
23	- MOTOR INBD AXIAL	.059 In/Sec	.386 G-s

71	- FAN INBD (ON PILLOWBLOCK FOOT)	.028 In/Sec	.265 G-s
81	- FAN OUTBD (ON PILLOWBLOCK FOOT)	.034 In/Sec	.162 G-s

5281-08 - BLOWER,RAPID COOLING (LOWER) (26-Jun-20)

		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBD HORIZ	.044 In/Sec	1.609 G-s
21	- MOTOR INBD HORIZ	.080 In/Sec	1.166 G-s
23	- MOTOR INBD AXIAL	.065 In/Sec	1.224 G-s
71	- FAN INBD (ON PILLOWBLOCK FOOT)	.020 In/Sec	.143 G-s
81	- FAN OUTBD (ON PILLOWBLOCK FOOT)	.016 In/Sec	.147 G-s

5281-10 - 200 BELT DRIVE, POLYMERIZER (26-Jun-20)

		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZ	.022 In/Sec	.535 G-s
21	- MOTOR INBD HORIZ	.046 In/Sec	.404 G-s
33	- GEARBOX INPUT AXIAL	.0072 In/Sec	.040 G-s
31	- GEARBOX INPUT HORIZ	.0098 In/Sec	.123 G-s
61	- GEARBOX OUTPUT HORIZ	.0051 In/Sec	.062 G-s
71	- INBOARD PILLOWBLOCK	.0029 In/Sec	.0020 G-s
81	- OUTBOARD PILLOWBLOCK	.0033 In/Sec	.0015 G-s

Clarification Of Vibration Units:

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

* - Indicates Data Has Date/Time Different From Machine Date/Time