

May 13, 2020

ARKEMA

Subject: week 3 vibration service report

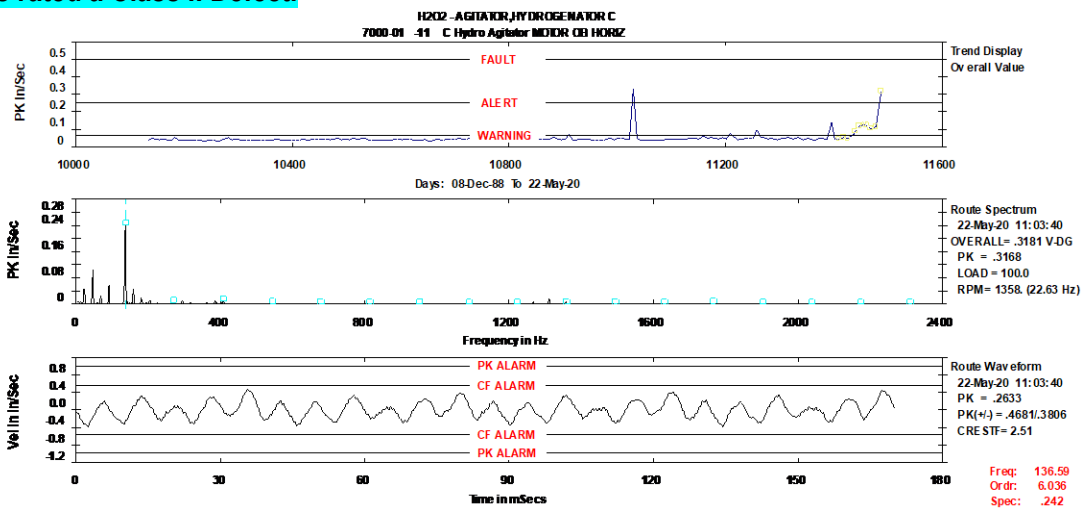
### Weekly Route Equipment

#### **C Concentrator Vacuum Pump 2130-1**

The pump axial radial vibrations are good. No action is required.

#### **Agitator, Hydrogenator C 7001-01**

The motor was changed out during the recent shutdown. We believe the motor bearings in the replacement motor are in some distress. A date tag on the motor indicated it was rebuilt in 2014. **Motor is rated a Class II Defect.**



**NOTE: There is a small gearbox lubrication pump adjacent to the motor that could be affecting the vibration seen in the motor and gearbox that is not on our vibration route. This unit should be inspected soon.**

#### **A/B Concentrator Vacuum Pump 57**

All vibrations were at or below 0.1"/sec velocity peak. No immediate action is required at this time.

#### **Flash Vacuum Pump 2130-1**

Vibrations appear to be normal this survey. No actions required.

**Air Compressor C-201**

Rotor bar vibrations are average for this motor's history. The trend clearly shows that the vibrations vary considerably over time. We still believe these motors have possible weak rotor bar end connections that cause the vibrations to fluctuate higher due to loading. We will continue to monitor this unit for changes. No actions required.

**Air Compressor C-202**

Rotor bar vibrations are average for this motor's history. The trend clearly shows that the vibrations vary considerably over time. We will watch this unit closely for changes. No immediate actions required at this time. **Defect Rating to a Class II.**

**Air Compressor C-203**

Rotor bar vibrations are average for this motor's history. The trend clearly shows that the vibrations vary considerably over time. We still believe these motors have possible weak rotor bar end connections that cause the vibrations to fluctuate higher due to loading. No actions required.

**Instrument Air Compressor new**

The male and female outboard shaft vertical vibrations have dropped slightly. We will keep a close eye on this unit going forward. **Rated a Class I Defect for now.**

**Air Compressor NASH A 201-08A**

Most every vibration measurement on this unit is lower after servicing. Highest is still in the pump itself at just over 0.25"/sec velocity peak. **Rated a Class I Defect.**

**D Hydrogenator Agitator 9002-10**

Vibration data shows a slight change in vibrations this survey. Highest amplitude is at 0.23"/sec velocity peak for the gearbox measurements. **Still rated a Class I Defect.**

## Monthly Route Equipment

### **Hydrogen ID Fan**

The fan shaft bearings were replaced, and the unit was aligned during the shutdown. It was suggested that the fan shaft be replaced at the next rebuild. Now we are seeing a few harmonics of shaft speed in the outer fan bearing. The third harmonic is dominant. Check the fan bearing fasteners for now both the caps and the feet bolts. Other checks might need to be performed. **Rated a Class I Defect.**

### **Hydrogen East Boiler Feed Water Pump**

The motor bearings are showing signs of distress. Acceleration is over 4 g's RMS. Consider replacing the motor later this year. **Rated a Class II Defect.**

### **H2O2 Cooling Towers**

The North tower South fan, and the South tower North fan have sinusoidal vibrations above 0.3"/sec velocity peak in them. Inspect as time allows. **Rated a Class I Defect.**

**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,

David W. Shook  
Senior Reliability Specialist

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**Hi-Speed Industrial Service**

Abbreviated Last Measurement Summary  
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Database: Arkema.rbm  
Station: PEROXIDE  
Route No. 5: ARK WK 3  
Report Date: 26-May-20 07:16

MEASUREMENT POINT -----	OVERALL LEVEL -----	HFD / VHFD -----
2130-1old - C Concentrator Vacuum Pump	(22-May-20)	
	OVERALL LEVEL	1-20 KHz
11 - Motor OB HOR	.061 In/Sec	.337 G-s
21 - Motor IB HOR	.067 In/Sec	.323 G-s
23 - Motor IB AXIAL	.118 In/Sec	.196 G-s
71 - Compressor IB HOR	.139 In/Sec	.725 G-s
81 - Compressor OB Horiz	.180 In/Sec	.600 G-s
83 - Compressor OB Axial	.104 In/Sec	1.228 G-s
 7000-01 - AGITATOR, HYDROGENATOR C	 (22-May-20)	
	OVERALL LEVEL	1-20 KHz
01 - DRIVESHAFT BRG-NORTH-SOUTH	.041 In/Sec	.088 G-s
02 - DRIVESHAFT BRG-EAST-WEST	.040 In/Sec	.035 G-s
03 - DRIVESHAFT BRG-VERTICAL	.048 In/Sec	.059 G-s
11 - C Hydro Agitator MOTOR OB HORIZ	.318 In/Sec	.478 G-s
12 - C Hydro Agitator MOTOR OB VERT	.132 In/Sec	.834 G-s
13 - C Hydro Agitator Motor OB Axial	.193 In/Sec	.667 G-s
21 - C Hydro Agitator MOTOR IB HORIZ	.120 In/Sec	.349 G-s
22 - C Hydro Agitator MOTOR IB VERT	.214 In/Sec	.309 G-s
23 - C Hydro Agitator Motor IB Axial	.189 In/Sec	.379 G-s
31 - C Hydro Agitator GrBx In Horizon	.152 In/Sec	.560 G-s
32 - C Hydro Agitator GrBx In VERT	.097 In/Sec	.782 G-s
33 - C Hydro Agitator GrBx In Axial	.084 In/Sec	.253 G-s
41 - C Hydro Agitator GrBx Top HZ E-W	.133 In/Sec	.411 G-s
42 - C Hydro Agitator GrBx TOP HZ N-S	.033 In/Sec	.475 G-s
51 - C Hydro Agitator GrBx BOT HZ E-W	.034 In/Sec	.446 G-s
52 - C Hydro Agitator GrBx BOT HZ N-S	.022 In/Sec	.548 G-s
53 - C Hydro Agitator GrBx Top Axial	.049 In/Sec	.501 G-s
 57 - A/B Concentr Vac Pmp-var RPM	 (22-May-20)	
	OVERALL LEVEL	1-20 KHz
11 - Motor OB HOR	.043 In/Sec	.188 G-s
12 - Motor OB VERT	.080 In/Sec	.154 G-s
21 - Motor IB HOR	.082 In/Sec	.743 G-s
23 - Motor IB AXIAL	.038 In/Sec	.214 G-s
71 - Compressor IB HOR	.101 In/Sec	.426 G-s
81 - Compressor OB Horiz	.085 In/Sec	.483 G-s
83 - Compressor OB Axial	.032 In/Sec	.472 G-s
 2130-1 - FLASH VAP VAC PUMP-var speed	 (22-May-20)	
	OVERALL LEVEL	1-20 KHz
11 - Motor OB HOR	.048 In/Sec	.238 G-s
12 - Motor OB VERT	.035 In/Sec	.190 G-s

21 - Motor IB HOR	.040 In/Sec	.892 G-s
22 - Motor IB VERT	.046 In/Sec	.904 G-s
23 - Motor IB AXIAL	.038 In/Sec	.054 G-s
71 - Compressor IB HOR	.059 In/Sec	.300 G-s
72 - Compressor IB VERT	.070 In/Sec	.453 G-s
81 - Compressor OB Horiz	.067 In/Sec	.287 G-s
82 - Compressor OB VERT	.078 In/Sec	.353 G-s
83 - Compressor OB Axial	.043 In/Sec	.369 G-s

C-203 - C-203 Comp

(22-May-20)

	OVERALL LEVEL	1-20 KHz
11 - MOTOR OB HOR	.030 In/Sec	1.013 G-s
12 - MOTOR OB VERT	.029 In/Sec	.296 G-s
21 - MOTOR IB HOR	.029 In/Sec	.966 G-s
22 - MOTOR IB VERT	.077 In/Sec	3.068 G-s
23 - MOTOR IB AXIAL	.029 In/Sec	1.011 G-s

	OVERALL LEVEL	1-20 KHz
71M - COMP MALE SHAFT IB HOR	.039 In/Sec	1.569 G-s
72M - COMP MALE SHAFT IB VERT	.037 In/Sec	1.056 G-s
73M - COMP MALE SHAFT IB AXIAL	.086 In/Sec	1.377 G-s
81M - COMP MALE SHAFT OB HOR	.050 In/Sec	2.373 G-s
82M - COMP MALE SHAFT OB VERT	.059 In/Sec	2.632 G-s
71F - COMP FEMALE SHAFT IB HOR	.040 In/Sec	2.399 G-s
72F - COMP FEMALE SHAFT IB VERT	.052 In/Sec	1.364 G-s
73F - COMP FEMALE SHAFT IB AXIAL	.087 In/Sec	6.395 G-s
81F - COMP FEMALE SHAFT OB HOR	.060 In/Sec	2.710 G-s
82F - COMP FEMALE SHAFT OB VERT	.044 In/Sec	.754 G-s

C-202 - C-202 Comp

(22-May-20)

	OVERALL LEVEL	1-20 KHz
11 - MOTOR OB HOR	.071 In/Sec	2.635 G-s
12 - MOTOR OB VERT	.104 In/Sec	.630 G-s
21 - MOTOR IB HOR	.059 In/Sec	.477 G-s
22 - MOTOR IB VERT	.085 In/Sec	.760 G-s
23 - MOTOR IB AXIAL	.067 In/Sec	2.003 G-s

	OVERALL LEVEL	1-20 KHz
71M - COMP MALE SHAFT IB HOR	.048 In/Sec	1.386 G-s
72M - COMP MALE SHAFT IB VERT	.041 In/Sec	1.074 G-s
73M - COMP MALE SHAFT IB AXIAL	.096 In/Sec	1.765 G-s
81M - COMP MALE SHAFT OB HOR	.055 In/Sec	1.498 G-s
82M - COMP MALE SHAFT OB VERT	.051 In/Sec	1.422 G-s
71F - COMP FEMALE SHAFT IB HOR	.039 In/Sec	2.073 G-s
72F - COMP FEMALE SHAFT IB VERT	.076 In/Sec	.407 G-s
73F - COMP FEMALE SHAFT IB AXIAL	.069 In/Sec	9.067 G-s
81F - COMP FEMALE SHAFT OB HOR	.045 In/Sec	3.292 G-s
82F - COMP FEMALE SHAFT OB VERT	.057 In/Sec	1.442 G-s

C-201 - C-201 Comp

(22-May-20)

	OVERALL LEVEL	1-20 KHz
11 - MOTOR OB HOR	.098 In/Sec	1.953 G-s
12 - MOTOR OB VERT	.129 In/Sec	3.659 G-s
21 - MOTOR IB HOR	.100 In/Sec	.605 G-s
22 - MOTOR IB VERT	.044 In/Sec	1.207 G-s
23 - MOTOR IB AXIAL	.094 In/Sec	3.076 G-s

	OVERALL LEVEL	1-20 KHz
71M - COMP MALE SHAFT IB HOR	.043 In/Sec	1.493 G-s
72M - COMP MALE SHAFT IB VERT	.051 In/Sec	2.615 G-s

73M - COMP MALE SHAFT IB AXIAL	.088 In/Sec	1.348 G-s
81M - COMP MALE SHAFT OB HOR	.051 In/Sec	2.876 G-s
82M - COMP MALE SHAFT OB VERT	.060 In/Sec	2.778 G-s
71F - COMP FEMALE SHAFT IB HOR	.055 In/Sec	2.795 G-s
72F - COMP FEMALE SHAFT IB VERT	.044 In/Sec	1.198 G-s
73F - COMP FEMALE SHAFT IB AXIAL	.085 In/Sec	6.432 G-s
81F - COMP FEMALE SHAFT OB HOR	.066 In/Sec	2.984 G-s
82F - COMP FEMALE SHAFT OB VERT	.051 In/Sec	1.192 G-s

new AC - INSTRUMENT AIR COMPRESSOR

(22-May-20)

	OVERALL LEVEL	1-20 KHz
11 - MOTOR OB HOR	.159 In/Sec	.503 G-s
12 - MOTOR OB VERT	.103 In/Sec	.657 G-s
13 - MOTOR OB AXIAL	.054 In/Sec	.484 G-s
21 - MOTOR IB HOR	.163 In/Sec	.999 G-s
22 - MOTOR IB VERT	.077 In/Sec	.847 G-s
23 - MOTOR IB AXIAL	.070 In/Sec	.311 G-s

OVERALL LEVEL

1-20 KHz

71F - COMP FEMALE SHAFT IB HOR	.155 In/Sec	6.244 G-s
72F - COMP FEMALE SHAFT IB VERT	.152 In/Sec	3.033 G-s
73F - COMP FEMALE SHAFT IB AXIAL	.145 In/Sec	3.672 G-s
81F - COMP FEMALE SHAFT OB HOR	.144 In/Sec	2.471 G-s
82F - COMP FEMALE SHAFT OB VERT	.237 In/Sec	6.146 G-s
83F - COMP FEMALE SHAFT OB AXIAL	.139 In/Sec	3.351 G-s
71M - COMP MALE SHAFT IB HOR	.113 In/Sec	6.127 G-s
72M - COMP MALE SHAFT IB VERT	.179 In/Sec	9.030 G-s
73M - COMP MALE SHAFT IB AXIAL	.132 In/Sec	4.570 G-s
81M - COMP MALE SHAFT OB HOR	.149 In/Sec	4.304 G-s
82M - COMP MALE SHAFT OB VERT	.251 In/Sec	7.532 G-s
83M - COMP MALE SHAFT OB AXIAL	.222 In/Sec	7.637 G-s

201-08A - COMPRESSOR,NASH A 201-08A

(22-May-20)

	OVERALL LEVEL	1-20 KHz
11 - Nash Compr A Motor OB Horiz	.072 In/Sec	.107 G-s
12 - Nash Compr A Motor OB Vertical	.076 In/Sec	.197 G-s
13 - Nash Compr A Motor OB Axial	.156 In/Sec	.070 G-s
21 - Nash Compr A Motor IB Horiz	.077 In/Sec	.079 G-s
22 - Nash Compr A Motor IB VERT	.098 In/Sec	.107 G-s
23 - Nash Compr A Motor IB AXIAL	.140 In/Sec	.067 G-s
71 - Nash Compr A COMP IB HORIZ	.148 In/Sec	.716 G-s
72 - Nash Compr A Compressor IB Verti	.230 In/Sec	.973 G-s
73 - Nash Compr A COMP IB AXIAL	.140 In/Sec	.136 G-s
81 - Nash Compr A COMP OB HORIZ	.171 In/Sec	.339 G-s
82 - Nash Compr A Compressor OB Verti	.251 In/Sec	.269 G-s
83 - Nash Compr A Compressor OB Axial	.148 In/Sec	.229 G-s

9002-10 - D-HYDROGENATOR AGITATOR

(22-May-20)

	OVERALL LEVEL	1-20 KHz
21 - MOTOR INBOARD HORIZONTAL	.062 In/Sec	.152 G-s
23 - MOTOR INBOARD AXIAL	.049 In/Sec	.055 G-s
31 - GEARBOX INPUT SHAFT -HORIZONTAL	.179 In/Sec	.616 G-s
51 - GEARBOX TOP PLATE- E-W	.220 In/Sec	.170 G-s
52 - GEARBOX TOP PLATE- N-S	.172 In/Sec	.214 G-s
53 - GEARBOX OUTPUT TOP -VERTICAL	.126 In/Sec	.503 G-s
61 - GEARBOX BOTTOM E-W-HORIZONTAL	.230 In/Sec	.097 G-s
81 - AGIT INTERMED BRG @ SEAL- N-S	.049 In/Sec	.042 G-s
82 - AGIT INTERMED BRG @ SEAL- E-W	.047 In/Sec	.027 G-s

83	- AGIT INTERMED BRG @ SEAL- VERT	.040 In/Sec	.163 G-s
NTC-SF - N CT-SOUTH FAN, N TWR			
		(22-May-20)	
		OVERALL LEVEL	1-20 KHz
1	- MOTOR OB HORIZ	.354 In/Sec	.518 G-s
2	- MOTOR IB HORIZ	.189 In/Sec	.432 G-s
3	- MOTOR IB AXIAL	.214 In/Sec	.439 G-s
		OVERALL LEVEL	1-20 KHz
4	- GEARBOX INPUT HORIZONTAL	.220 In/Sec	.500 G-s
5	- GEARBOX VERTICAL	.0055 In/Sec	.0012 G-s
6	- GEARBOX AXIAL	.280 In/Sec	.434 G-s
6L	- GEARBOX AXIAL LOW FREQ	.264 In/Sec	.431 G-s
NCT - NF - N CT -NORTH FAN, N TWR			
		(22-May-20)	
		OVERALL LEVEL	1-20 KHz
7	- MOTOR OB HORIZ	.222 In/Sec	.386 G-s
8	- MOTOR IB HORIZ	.182 In/Sec	.371 G-s
9	- MOTOR IB AXIAL	.129 In/Sec	.311 G-s
		OVERALL LEVEL	1-20 KHz
10	- GEARBOX INPUT HORIZONTAL	.131 In/Sec	.339 G-s
11	- GEARBOX VERTICAL	.149 In/Sec	.304 G-s
12	- GEARBOX AXIAL	.144 In/Sec	.394 G-s
530-02 - PUMP,N.COOLING TWR,MIDDLE			
		(22-May-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOT TOP N-S	.109 In/Sec	.412 G-s
12	- MOTOR TOP E-W	.164 In/Sec	.516 G-s
530-03 - PUMP,N.COOLING TWR,SOUTH			
		(22-May-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOT TOP N-S	.106 In/Sec	.471 G-s
12	- MOTOR TOP E-W	.107 In/Sec	.368 G-s
548-7 - IRON-FREE H2O BOOSTER PUMP			
		(22-May-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZONTAL	.033 In/Sec	.344 G-s
21	- MOTOR INBOARD HORIZONTAL	.031 In/Sec	.539 G-s
23	- MOTOR INBOARD AXIAL	.042 In/Sec	.275 G-s
71	- PUMP HORIZONTAL	.062 In/Sec	.050 G-s
72	- PUMP VERTICAL	.040 In/Sec	.081 G-s
STC-NF - S CT - NORTH FAN, S TWR			
		(22-May-20)	
		OVERALL LEVEL	1-20 KHz
1	- MOTOR OB HORIZ	.328 In/Sec	.408 G-s
2	- MOTOR IB HORIZ	.240 In/Sec	.179 G-s
3	- MOTOR IB AXIAL	.192 In/Sec	.089 G-s
		OVERALL LEVEL	1-20 KHz
6	- GEARBOX AXIAL	.262 In/Sec	.394 G-s
4	- GEARBOX INPUT HORIZONTAL	.156 In/Sec	.508 G-s
STC-MF - S CT - MID FAN, S TWR			
		(22-May-20)	
		OVERALL LEVEL	1-20 KHz
1	- MOTOR OB HORIZ	.286 In/Sec	.373 G-s
2	- MOTOR IB HORIZ	.243 In/Sec	.166 G-s
3	- MOTOR IB AXIAL	.150 In/Sec	.170 G-s
		OVERALL LEVEL	1-20 KHz
6	- GEARBOX AXIAL	.099 In/Sec	.313 G-s

4	- GEARBOX INPUT HORIZONTAL	.115 In/Sec	.415 G-s
5	- GEARBOX VERTICAL	.094 In/Sec	.522 G-s

STC-SF - S CT - SOUTH FAN, S TWR		(22-May-20)	
		OVERALL LEVEL	1-20 KHz
1	- MOTOR OB HORIZ	.236 In/Sec	.340 G-s
2	- MOTOR IB HORIZ	.271 In/Sec	.194 G-s
3	- MOTOR IB AXIAL	.250 In/Sec	.092 G-s
		OVERALL LEVEL	1-20 KHz
6	- GEARBOX AXIAL	.224 In/Sec	.475 G-s
4	- GEARBOX INPUT HORIZONTAL	.204 In/Sec	.520 G-s
5	- GEARBOX VERTICAL	.282 In/Sec	.650 G-s

SCT-1 - SOUTH CT PUMP - EAST		(22-May-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZONTAL	.033 In/Sec	.867 G-s
21	- MOTOR INBOARD HORIZONTAL	.057 In/Sec	1.297 G-s
23	- MOTOR INBOARD AXIAL	.076 In/Sec	.404 G-s
71	- PUMP HORIZONTAL	.161 In/Sec	.880 G-s
72	- PUMP VERTICAL	.131 In/Sec	.793 G-s

SCT-2 - SOUTH CT PUMP - MID		(22-May-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZONTAL	.041 In/Sec	.293 G-s
21	- MOTOR INBOARD HORIZONTAL	.047 In/Sec	.131 G-s
23	- MOTOR INBOARD AXIAL	.067 In/Sec	.218 G-s
71	- PUMP HORIZONTAL	.151 In/Sec	.370 G-s
72	- PUMP VERTICAL	.134 In/Sec	.696 G-s

SCT-3 - SOUTH CT PUMP - WEST		(22-May-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZONTAL	.066 In/Sec	1.361 G-s
21	- MOTOR INBOARD HORIZONTAL	.052 In/Sec	.783 G-s
23	- MOTOR INBOARD AXIAL	.108 In/Sec	.574 G-s
71	- PUMP HORIZONTAL	.182 In/Sec	.483 G-s
72	- PUMP VERTICAL	.209 In/Sec	.683 G-s

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Clarification Of Vibration Units:

Acc --> G-s PK

Vel --> In/Sec PK

Abbreviated Last Measurement

Summary

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Database: Arkema.rbm

Station: HYDROGEN

Route No. 1: H2 MONTHLY

Report Date: 26-May-20 07:16

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
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P2A - PUMP MEA CIRC WEST P2A	(22-May-20)	
	OVERALL LEVEL	1-20 KHz
11 - West MEA Circ Pmp Mtr OB Horizon	.194 In/Sec	.238 G-s
21 - West MEA Circ Pmp Mtr IB Horizon	.051 In/Sec	.375 G-s
23 - motor inboard axial	.059 In/Sec	.167 G-s

71	- West MEA Circ Pmp Pump IB Horizo	.182 In/Sec	.413 G-s
72	- pump vertical	.118 In/Sec	.437 G-s

P1B	- PUMP BFW EAST P1B	(22-May-20)	
		OVERALL LEVEL	1-20 KHz
11	- East Boiler FW Pmp Mtr OB Horizo	.213 In/Sec	1.578 G-s
21	- East Boiler FW Pmp Mtr IB Horizo	.182 In/Sec	4.292 G-s
23	- motor inboard axial	.256 In/Sec	6.232 G-s
71	- Pump IB HORIZ	.123 In/Sec	.079 G-s
72	- East Boiler FW Pump IB Vertical	.083 In/Sec	.332 G-s
81	- Pump OB HORIZ	.094 In/Sec	.459 G-s
82	- East Boiler FW Pump OB Vertical	.097 In/Sec	.238 G-s
83	- East Boiler FW Pump OB Axial	.071 In/Sec	.682 G-s

C2	- FD BLOWER C2	(22-May-20)	
		OVERALL LEVEL	1-20 KHz
11	- F.D.Fan Motor OB Horizontal	.119 In/Sec	.260 G-s
21	- F.D.Fan Motor I Horizontal	.122 In/Sec	.349 G-s
23	- F.D.Fan Motor AXIAL INBOARD	.070 In/Sec	.140 G-s
71	- F.D.Fan Coupling End Brg Horizon	.062 In/Sec	1.778 G-s
81	- F.D.Fan Fan End Brg Horizon	.113 In/Sec	.934 G-s

C1	- ID -BLOWER C1	(22-May-20)	
		OVERALL LEVEL	1-20 KHz
11	- I.D.Fan Motor OB Horizontal	.082 In/Sec	.233 G-s
21	- I.D.Fan Motor IB Horizontal	.111 In/Sec	.296 G-s
23	- motor inboard axial	.138 In/Sec	.382 G-s
71	- I.D.Fan Coupling End Horizontal	.114 In/Sec	1.117 G-s
72	- I.D.Fan Coupling End VERTICAL	.076 In/Sec	1.323 G-s
81	- I.D.Fan Fan End Horizontal	.308 In/Sec	1.048 G-s
82	- I.D.Fan Fan End VERTICAL	.223 In/Sec	1.061 G-s

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Clarification Of Vibration Units:

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