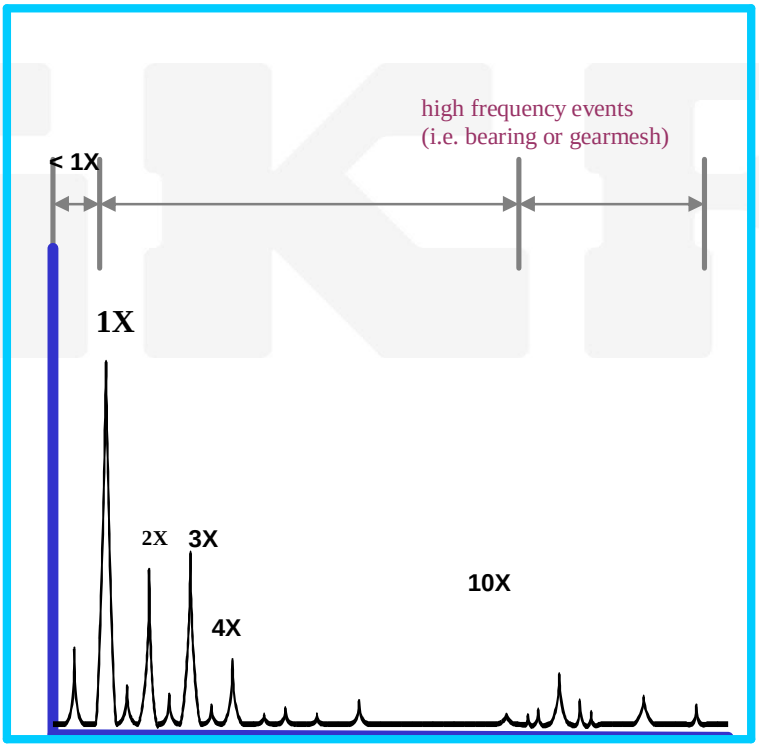
PREDICTIVE MAINTENANCE REPORT

Customer Name :

Site :

Date of Visit : 22nd March 2017

Report No. : PDM/ARC/VA/034/17



SKF CONTACT:	CUSTOMER CONTACT:
SKF Reliability Systems SKF India Limited 1st Floor, SKCL Design Square, S-11 & S-12, Thiru-Vi-Ka Ind. Estate, Guindy – Chennai – 600 032 Tel: 044 66614000 Fax:044 28524452	

II. INRODUCTION

This report is prepared keeping in view the customer's requirement of monitoring the health of any individual equipment at any point of time, as well as the capability to monitor the trend.

This vibration report consists of Vibration values collected at different positions on all the equipments. Demonstrated below is the procedure they have been codified:

Every vibration point consists of 3 characters. **(eg. 1HV OR 3AV etc.)**

1st Character is a number indicating **LOCATION** of the vibration Measurement
2nd Character indicates **ORIENTATION** of the vibration Measurement
3rd Character indicates **TYPE / CHARACTERISTIC** of the vibration Measurement

Location	Orientation	Type
1- Motor Non Drive End	H – Horizontal	V- Velocity
2- Motor Drive End	V – Vertical	A- Acceleration
3- (Fan / Pump) Drive End	A – Axial	D- Displacement
4- (Fan / Pump) NDE	R – Radial	EA- Enveloped Acceleration
5- Output bearing		

Etc.

CATEGORY:

NORMAL – Those machines that are operating within the satisfactory limits of Vibration values as per ISO-10816.

ALERT – Those machines that are operating above the satisfactory limits of Vibration values as per ISO-10816. It is usually recommended to plan the maintenance action at the earliest available opportunity; this would help reducing the after effects of any failure as well as properly plan the activity.

ALARM – Those machines that are operating in most abnormal condition and it is usually recommended to immediately take maintenance action, so as to avoid any catastrophic failure.

Velocity Severity	Velocity Range Limits and Machine Classes ISO Standard 10816-1			
			Large Machines	
mm/s RMS	Small Machine class I	Medium Machine Class II	Rigid Supports Class III	Less Rigid Supports Class III
0.28	Good	Good	Good	Good
0.45				
0.71				
1.12	Satisfactory			
1.80		Satisfactory		
2.80	Unsatisfactory (Alert)		Satisfactory	
4.50		Unsatisfactory (Alert)		Satisfactory
7.10	Unacceptable (Alarm)		Unsatisfactory (Alert)	
11.20		Unacceptable (Alarm)		Unsatisfactory (Alert)
18.00			Unacceptable (Alarm)	
28.00				Unacceptable (alarm)
45.00				

MACHINE CLASSIFICATION IN ACCORDANCE WITH ISO 10816-1

Class 1 :	Individual parts of engines and machines, integrally connected with the complete machine in its normal operating condition. (Production electrical motors of up to 15 Kw are typical examples of machines in this category)

Class 2 :	Medium-sized machines, (Typically Electrical Motors with 15 to 75 Kw output) without special foundations, rigidly mounted engines or machines (up to 300 Kw) on special foundations.

Class 3 :	Large prime movers and other large machines with rotating masses mounted on rigid and heavy foundation which are relatively stiff in the direction of vibration measurement.

Class 4 :	Large prime movers and other large machines with rotating masses mounted on rigid and heavy foundation which are relatively soft in the direction of vibration measurement. (for ex. Turbo generator sets, especially those with light weight substructures).

Class 5 :	Machines and mechanical drives system with unbalanceable inertia effects (due to reciprocating parts), mounted on foundations which are relatively stiff in the direction of vibration measurement.

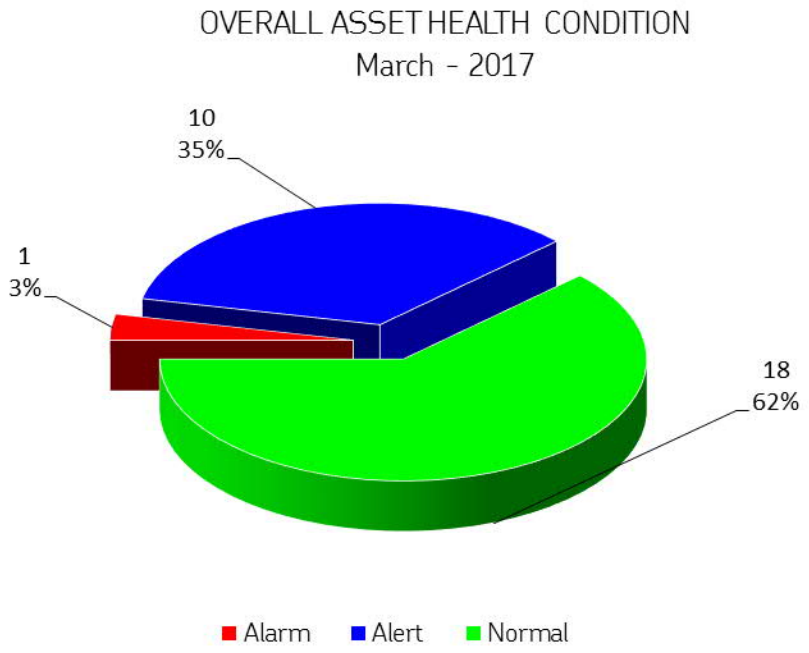
Visited & Analysed by : **Mr. Vaibhav Jain**

Microlog Model : **CMXA 70**

Microlog Sl.No. **1009047**

Calibration Due : **May-2017**

During the visit of our Engineer to your plant on **22.03.2017**, detailed vibration measurement and analysis was carried out on the following machines. The Present health condition of each machines are given below for your ready reference.



S.NO	EQUIPMENT NAME	HEALTH CONDITION	PAGE NO.
1	HAMMER MILL DC FAN	NORMAL	06 – 07
2	GENERAL DC FAN	ALERT	08 – 10
3	COATING CIRCUIT BOOSTER FAN	NORMAL	11 – 12
4	COATING CIRCUIT MAIN AIR FAN	ALERT	13 – 15
5	SELOX MAIN AIR FAN	NORMAL	16 – 17
6	COATING FUGITIVE FAN	ALERT	18 – 20
7	UN-COATING FUGITIVE FAN	ALERT	21 – 23
8	UNCOATED TRANSFER BLOWER	NORMAL	24 – 25
9	COATED TRANSFER BLOWER	NORMAL	26 – 27
10	BALL MILL	NORMAL	28 – 30

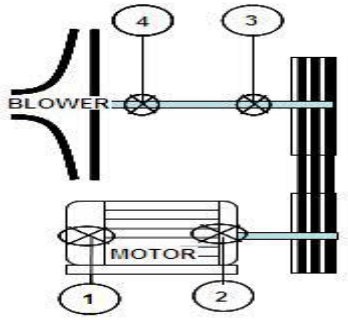
11	HAMMER MILL RIGHT (DRIVE#1)	ALERT	31 – 33
12	HAMMER MILL LEFT (DRIVE#2)	NORMAL	34 – 36
13	CLASSIFIER	NORMAL	37 – 38
14	DE-AGGLOMERATOR	NORMAL	39 – 40
15	BLENDER – HOUSING SIDE	NORMAL	41 – 42
16	BLENDER – DOOR SIDE	NORMAL	43 – 44
17	BLENDER AERATION BLOWER	NORMAL	45 – 46
18	PRODUCT SILO AERATION BLOWER	NORMAL	47 – 48
19	BALL MILL DISCHARGE BUCKET ELEVATOR	NORMAL	49 – 51
20	SILO FEED BUCKET ELEVATOR	ALERT	52 – 54
21	CLASSIFIER AIR SLIDE FAN	ALERT	55 – 56
22	SEAL AIR FAN	ALERT	57 – 58
23	SILO-1 BINVENT FAN	NORMAL	59 – 60
24	SILO-2 BINVENT FAN	ALARM	61 – 62
25	SILO-3 BINVENT FAN	ALERT	63 – 64
26	SILO-4 BINVENT FAN	NORMAL	65 – 66
27	SILO-6 BINVENT FAN	NORMAL	67 - 68
28	COMPRESSOR - 1	NORMAL	69 – 71
29	COMPRESSOR - 2	ALERT	72 – 74

Additional to the vibration analysis and diagnostic survey SKF can also help in implementing the following inspections and rectifications.

- *In-Situ Dynamic Balancing*
- *Laser Alignment of rigid rotors – Shaft & Pulley*
- *Root cause Failure analysis (RCFA) of anti friction bearings*
- *Thermography*
- *Acoustic emission*
- *Remote Diagnostics*
- *Mounting & dismounting of anti friction bearings- Only inspection*
- *Motor current signature analysis (MCSA)*
- *Lubrication Management*
- *Oil Analysis*
- *Engineering Simulation Services / Structural analysis*
- *Stock inspection-anti friction bearings*
- *Bearing remanufacturing*
- *Spindle services*
- *Maintenance Strategy review*
- *SRCM*

If there is any specific requirements, kindly feel free to contact us.

Detailed Measurement and Analysis Report is as follows.

Vibration Analysis Report 22.03.2017		SKF RELIABILITY SYSTEMS	
EQUIPMENT S/NO.	1	EQUIPMENT NAME	HAMMER MILL DC FAN
MACHINE SKETCH			

Vibration Limits for this equipment – Velocity in mm/sec (rms)			
POSITION	NORMAL	ALERT	ALARM
MOTOR / BLOWER	7.1	7.1 to 18.0	Above 18.0

EQUIPMENT SPECIFICATIONS				
DESCRIPTION	DRIVE	DRIVEN	MOUNTING	Y/N
Rated Speed	1480 RPM	1313 RPM	At Ground	N
Power Rating	75 KW	NA	On Rigid Concrete	N
Bearing No. (DE/NDE)	6317 / 6314	22220 EK / 22220 EK	Above Ground Level	Y
			On Vibro Pad	Y
Pulley Dia	315	335	On Steel Structure	Y

HIGHEST AMPLITUDES & HEALTH CONDITION			
LOCATION	VELOCITY (mm/sec) in rms		HEALTH CONDITION
	Previous (23.01.2017)	Present (22.03.2017)	
MOTOR	4.1	3.9	NORMAL
BLOWER	3.4	3.5	NORMAL

OBSERVATIONS:

This equipment is indicating an "NORMAL" behavior with maximum vibration amplitudes of 3.9 mm/s recorded in the Motor bearings.

ANALYSIS:

- Vibrations increased slightly with minor symptoms of structural looseness at motor end.

ACTION PLAN:

1. It is suggested to keep close monitoring over system feedback during routine field observations.

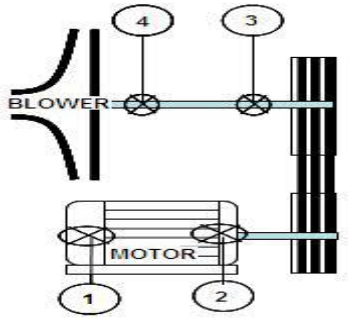
Last Measurement Report

Source: Hammer Mill DC Fan

4/7/2017 12:22:08 PM

Last Measurement

POINT name	Date/Time	Last value	Units
Motor NDE 1H	3/22/2017 10:30:12 AM	1.729	mm/s
Motor NDE 1HL	3/22/2017 10:30:17 AM	1.746	mm/s
Motor NDE HA	3/22/2017 10:30:20 AM	0.203	g
Motor NDE 1HgE3	3/22/2017 10:30:23 AM	1.881	gE
Motor NDE 1V	3/22/2017 10:30:34 AM	3.220	mm/s
Motor NDE 1A	3/22/2017 10:30:44 AM	2.287	mm/s
Motor DE 2H	3/22/2017 10:30:53 AM	2.246	mm/s
Motor DE HA	3/22/2017 10:30:56 AM	0.341	g
Motor DE 2HgE3	3/22/2017 10:31:00 AM	2.903	gE
Motor DE 2V	3/22/2017 10:31:12 AM	3.977	mm/s
Motor DE 2A	3/22/2017 10:31:21 AM	2.180	mm/s
Fan DE 3HL-V	3/22/2017 10:31:39 AM	3.595	mm/s
Fan DE 3H	3/22/2017 10:31:42 AM	3.404	mm/s
Fan DE HA	3/22/2017 10:31:45 AM	0.902	g
Fan DE 3HgE3	3/22/2017 10:31:48 AM	12.743	gE
Fan DE 3V	3/22/2017 10:32:00 AM	3.517	mm/s
Fan DE 3A	3/22/2017 10:32:11 AM	2.314	mm/s
Fan NDE 4HL	3/22/2017 10:32:21 AM	2.919	mm/s
Fan NDE 4H	3/22/2017 10:32:24 AM	2.875	mm/s
Fan NDE HA	3/22/2017 10:32:27 AM	0.565	g
Fan NDE 4HgE3	3/22/2017 10:32:31 AM	2.917	gE
Fan NDE 4V	3/22/2017 10:32:42 AM	3.294	mm/s
Fan NDE 4A	3/22/2017 10:32:55 AM	2.318	mm/s

Vibration Analysis Report 22.03.2017		SKF RELIABILITY SYSTEMS	
EQUIPMENT S/NO.	2	EQUIPMENT NAME	GENERAL DC FAN
MACHINE SKETCH			

Vibration Limits for this equipment – Velocity in mm/sec (rms)			
POSITION	NORMAL	ALERT	ALARM
MOTOR / BLOWER	7.1	7.1 to 18.0	Above 18.0

EQUIPMENT SPECIFICATIONS				
DESCRIPTION	DRIVE	DRIVEN	MOUNTING	Y/N
Rated Speed	1475 RPM	2733 RPM	At Ground	N
Power Rating	45 KW	NA	On Rigid Concrete	N
Bearing No. (DE/NDE)	6313 / 6313	6312 / 6312	Above Ground Level	Y
			On Vibro Pad	Y
Pulley Dia	315	170	On Steel Structure	Y

HIGHEST AMPLITUDES & HEALTH CONDITION			
LOCATION	VELOCITY (mm/sec) in rms		HEALTH CONDITION
	Previous (23.01.2017)	Present (22.03.2017)	
MOTOR	4.3	5.4	NORMAL
BLOWER	9.8	6.2	ALERT

OBSERVATIONS:

This equipment is indicating an "ALERT" behavior with maximum vibration amplitudes of 6.2 mm/s recorded in the Blower bearings.

ANALYSIS:

- Overall health condition of the equipment is slightly above than the ALERT condition but reduced significantly than the previous vibrations data.

ACTION PLAN:

1. Ok to run under trend monitoring, Improvement in system rigidity may reduce vibrations further.
2. Check belt pulley assembly for proper alignment & clean coating accumulated on fan impeller as per schedule.

Last Measurement Report

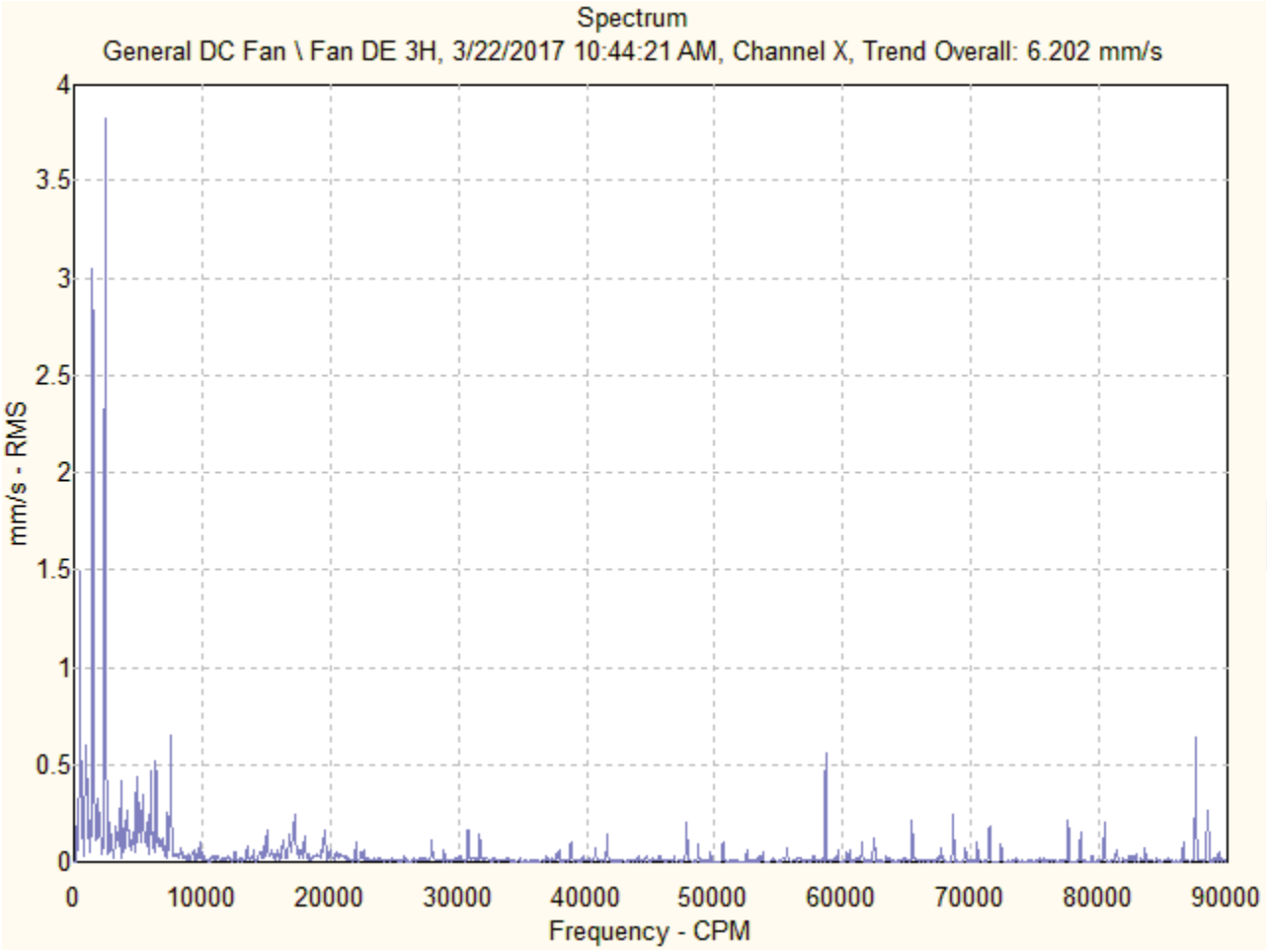
Source: General DC Fan

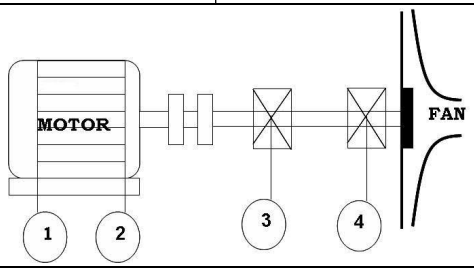
4/7/2017 12:22:49 PM

Last Measurement

POINT name	Date/Time	Last value	Units
Motor NDE 1H	3/22/2017 10:42:28 AM	4.054	mm/s
Motor NDE 1HL	3/22/2017 10:42:32 AM	3.913	mm/s
Motor NDE HA	3/22/2017 10:42:35 AM	0.377	g
Motor NDE 1HgE3	3/22/2017 10:42:38 AM	1.924	gE
Motor NDE 1V	3/22/2017 10:42:57 AM	4.003	mm/s
Motor NDE 1A	3/22/2017 10:43:20 AM	5.494	mm/s
Motor DE 2H	3/22/2017 10:43:29 AM	2.718	mm/s
Motor DE HA	3/22/2017 10:43:32 AM	0.546	g
Motor DE 2HgE3	3/22/2017 10:43:35 AM	2.090	gE
Motor DE 2V	3/22/2017 10:43:47 AM	3.879	mm/s
Motor DE 2A	3/22/2017 10:43:58 AM	5.427	mm/s
Fan DE 3H	3/22/2017 10:44:21 AM	6.202	mm/s
Fan DE HA	3/22/2017 10:44:24 AM	1.183	g
Fan DE 3HgE3	3/22/2017 10:44:30 AM	31.419	gE
Fan DE 3V	3/22/2017 10:44:42 AM	5.287	mm/s
Fan DE 3A	3/22/2017 10:44:54 AM	3.546	mm/s
Fan NDE 4HL	3/22/2017 10:45:08 AM	4.254	mm/s
Fan NDE 4H	3/22/2017 10:45:12 AM	4.627	mm/s
Fan NDE HA	3/22/2017 10:45:15 AM	1.408	g
Fan NDE 4HgE3	3/22/2017 10:45:18 AM	14.153	gE
Fan NDE 4V	3/22/2017 10:45:30 AM	3.843	mm/s
Fan NDE 4A	3/22/2017 10:45:39 AM	4.169	mm/s

General DC Fan \ Fan DE 3H



Vibration Analysis Report 22.03.2017		SKF RELIABILITY SYSTEMS	
EQUIPMENT S/NO.	3	EQUIPMENT NAME	COATING CIRCUIT BOOSTER FAN
MACHINE SKETCH			

Vibration Limits for this equipment – Velocity in mm/sec (rms)			
POSITION	NORMAL	ALERT	ALARM
MOTOR / BLOWER	4.5	4.5 to 11.2	Above 11.2

EQUIPMENT SPECIFICATIONS				
DESCRIPTION	DRIVE	DRIVEN	MOUNTING	Y/N
Rated Speed	2960 RPM	2960 RPM	At Ground	N
Power Rating	75 KW	NA	On Rigid Concrete	N
Bearing No. (DE/NDE)	6317 ZZ 6314ZZ	22215 EK 22215 EK	Above Ground Level On Vibro Pad	Y Y
Pulley Dia	NA	NA	On Steel Structure	Y

HIGHEST AMPLITUDES & HEALTH CONDITION			
LOCATION	VELOCITY (mm/sec) in rms		HEALTH CONDITION
	Previous (23.01.2017)	Present (22.03.2017)	
MOTOR	3.2	2.6	NORMAL
BLOWER	7.2	4.0	NORMAL

OBSERVATIONS:

This equipment is indicating an "ALERT" behavior with maximum vibration amplitudes of 4.0 mm/s recorded in the Blower bearings.

ANALYSIS:

- Overall health condition of the equipment is in NORMAL condition & Vibrations observed with slight decrement at fan end with respect to last measurement.

ACTION PLAN:

1. Ok to run under trend monitoring following routine coating cleaning.

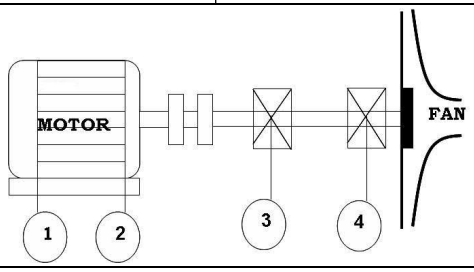
Last Measurement Report

Source: Coat Circ Boost Fan

4/7/2017 12:23:54 PM

Last Measurement

POINT name	Date/Time	Last value	Units
Motor NDE 1H	3/22/2017 10:33:21 AM	0.836	mm/s
Motor NDE 1HL	3/22/2017 10:33:26 AM	0.797	mm/s
Motor NDE HA	3/22/2017 10:33:29 AM	0.248	g
Motor NDE 1HgE3	3/22/2017 10:33:32 AM	1.714	gE
Motor NDE 1V	3/22/2017 10:34:16 AM	1.781	mm/s
Motor NDE 1A	3/22/2017 10:34:28 AM	1.839	mm/s
Motor DE 2H	3/22/2017 10:34:45 AM	2.665	mm/s
Motor DE HA	3/22/2017 10:34:48 AM	0.357	g
Motor DE 2HgE3	3/22/2017 10:34:51 AM	2.400	gE
Motor DE 2V	3/22/2017 10:35:04 AM	1.932	mm/s
Motor DE 2A	3/22/2017 10:35:13 AM	1.238	mm/s
Fan DE 3HL-V	3/22/2017 10:35:37 AM	2.551	mm/s
Fan DE 3H	3/22/2017 10:35:40 AM	2.623	mm/s
Fan DE HA	3/22/2017 10:35:43 AM	0.511	g
Fan DE 3HgE3	3/22/2017 10:35:46 AM	5.638	gE
Fan DE 3V	3/22/2017 10:35:59 AM	2.728	mm/s
Fan DE 3A	3/22/2017 10:36:11 AM	2.661	mm/s
Fan NDE 4HL	3/22/2017 10:36:32 AM	3.962	mm/s
Fan NDE 4H	3/22/2017 10:36:35 AM	3.985	mm/s
Fan NDE HA	3/22/2017 10:36:38 AM	0.295	g
Fan NDE 4HgE3	3/22/2017 10:36:41 AM	2.196	gE
Fan NDE 4V	3/22/2017 10:37:04 AM	4.025	mm/s
Fan NDE 4A	3/22/2017 10:37:18 AM	2.811	mm/s

Vibration Analysis Report 22.03.2017		SKF RELIABILITY SYSTEMS	
EQUIPMENT S/NO.	4	EQUIPMENT NAME	COATING CIRCUIT MAIN AIR FAN
MACHINE SKETCH			

Vibration Limits for this equipment – Velocity in mm/sec (rms)			
POSITION	NORMAL	ALERT	ALARM
MOTOR / BLOWER	4.5	4.5 to 11.2	Above 11.2

EQUIPMENT SPECIFICATIONS				
DESCRIPTION	DRIVE	DRIVEN	MOUNTING	Y/N
Rated Speed	1460 RPM	1460 RPM	At Ground	N
Power Rating	18.5 KW	NA	On Rigid Concrete	N
Bearing No. (DE/NDE)	6310 ZZ 6210ZZ	22213 EK 22213 EK	Above Ground Level On Vibro Pad	Y Y
Pulley Dia	NA	NA	On Steel Structure	Y

HIGHEST AMPLITUDES & HEALTH CONDITION			
LOCATION	VELOCITY (mm/sec) in rms		HEALTH CONDITION
	Previous (23.01.2017)	Present (22.02.2017)	
MOTOR	4.0	5.1	ALERT
BLOWER	4.5	5.8	ALERT

OBSERVATIONS:

This equipment is indicating an "ALERT" behavior with maximum vibration amplitudes of 5.8 mm/s recorded in the Blower bearings.

ANALYSIS:

- Vibrations trending higher as per the previous history and now in ALERT range.
- Symptoms of structural looseness & considerable misalignment indicated in FFT spectrum.

ACTION PLAN:

1. It is suggested to check all the motor base bolts, bearing housing foundation bolts & vibro pads for proper function to the system.
2. Replace the faulty vibro pads, if any & reassess alignment between both the drives. Impeller to be cleaned for coating accumulated as per schedule.

Last Measurement Report

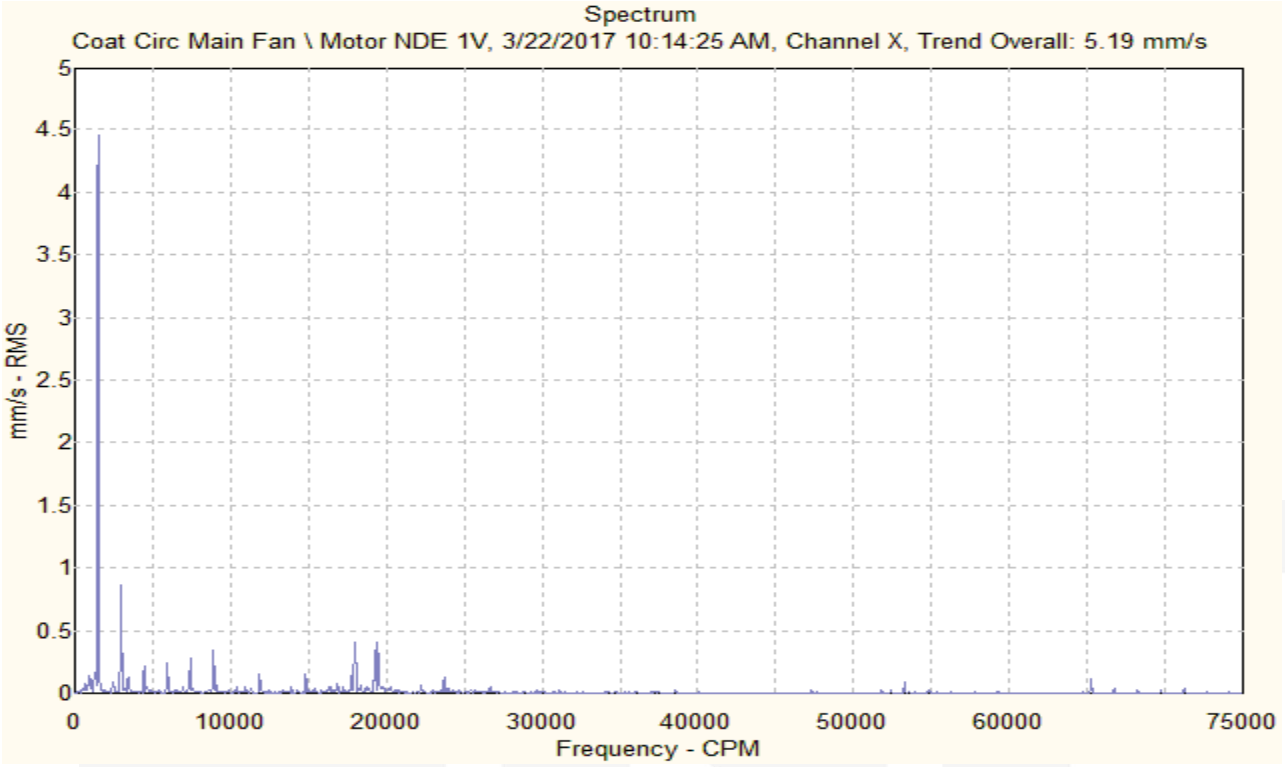
Source: Coat Circ Main Fan

4/7/2017 12:24:38 PM

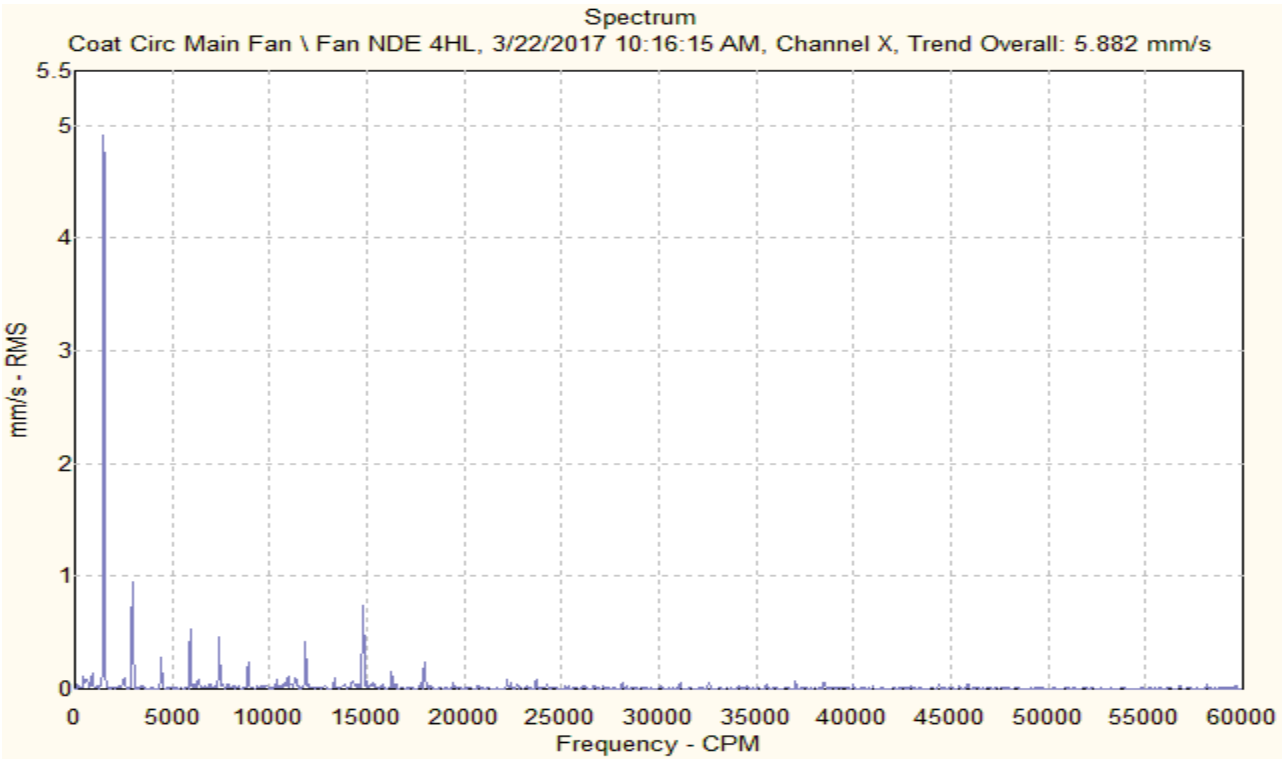
Last Measurement

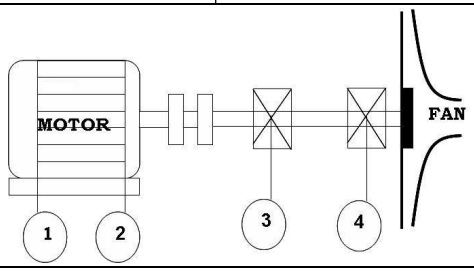
POINT name	Date/Time	Last value	Units
Motor NDE 1H	3/22/2017 10:13:48 AM	3.028	mm/s
Motor NDE 1HL	3/22/2017 10:13:52 AM	3.047	mm/s
Motor NDE HA	3/22/2017 10:13:55 AM	0.193	g
Motor NDE 1HgE3	3/22/2017 10:13:58 AM	0.988	gE
Motor NDE 1V	3/22/2017 10:14:25 AM	5.190	mm/s
Motor NDE 1A	3/22/2017 10:14:34 AM	2.726	mm/s
Motor DE 2H	3/22/2017 10:14:47 AM	2.433	mm/s
Motor DE HA	3/22/2017 10:14:50 AM	0.274	g
Motor DE 2HgE3	3/22/2017 10:14:53 AM	1.157	gE
Motor DE 2V	3/22/2017 10:15:10 AM	3.755	mm/s
Motor DE 2A	3/22/2017 10:15:22 AM	3.279	mm/s
Fan DE 3HL-V	3/22/2017 10:15:34 AM	3.406	mm/s
Fan DE 3H	3/22/2017 10:15:37 AM	3.423	mm/s
Fan DE HA	3/22/2017 10:15:40 AM	0.407	g
Fan DE 3HgE3	3/22/2017 10:15:43 AM	3.290	gE
Fan DE 3V	3/22/2017 10:15:54 AM	3.585	mm/s
Fan DE 3A	3/22/2017 10:16:05 AM	2.178	mm/s
Fan NDE 4HL	3/22/2017 10:16:15 AM	5.882	mm/s
Fan NDE 4H	3/22/2017 10:16:18 AM	5.894	mm/s
Fan NDE HA	3/22/2017 10:16:21 AM	0.423	g
Fan NDE 4HgE3	3/22/2017 10:16:24 AM	2.823	gE
Fan NDE 4V	3/22/2017 10:16:35 AM	5.613	mm/s
Fan NDE 4A	3/22/2017 10:16:49 AM	2.241	mm/s

Coat Circ Main Fan \ Motor NDE 1V



Coat Circ Main Fan \ Fan NDE 4HL



Vibration Analysis Report 22.03.2017		SKF RELIABILITY SYSTEMS	
EQUIPMENT S/NO.	5	EQUIPMENT NAME	SELOX MAIN AIR FAN
MACHINE SKETCH			

Vibration Limits for this equipment – Velocity in mm/sec (rms)			
POSITION	NORMAL	ALERT	ALARM
MOTOR / BLOWER	4.5	4.5 to 11.2	Above 11.2

EQUIPMENT SPECIFICATIONS				
DESCRIPTION	DRIVE	DRIVEN	MOUNTING	Y/N
Rated Speed	1485 RPM	1485 RPM	At Ground	Y
Power Rating	525 KW	NA	On Rigid Concrete	Y
Bearing No. (DE/NDE)	NU-324 6324/C3	22226 EK 22226 EK	Above Ground Level On Vibro Pad	N N
Pulley Dia	NA	NA	On Steel Structure	N

HIGHEST AMPLITUDES & HEALTH CONDITION			
LOCATION	VELOCITY (mm/sec) in rms		HEALTH CONDITION
	Previous (23.01.2017)	Present (22.03.2017)	
MOTOR	1.8	1.2	NORMAL
BLOWER	2.0	1.6	NORMAL

OBSERVATIONS:

This equipment is indicating an "NORMAL" behavior with maximum vibration amplitudes of 1.6 recorded in the Blower bearings.

ANALYSIS:

- The health condition of the equipment is NORMAL as per ISO standards.

ACTION PLAN:

1. Ok to run under trend monitoring.

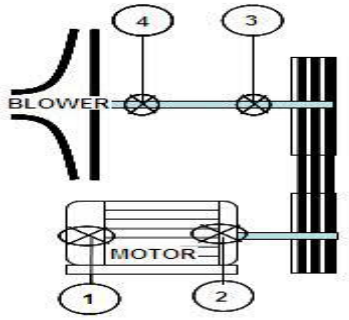
Last Measurement Report

Source: Selox Mainair Fan

4/7/2017 12:25:51 PM

Last Measurement

POINT name	Date/Time	Last value	Units
Motor NDE 1H	3/22/2017 11:04:28 AM	1.208	mm/s
Motor NDE HA	3/22/2017 11:04:31 AM	0.434	g
Motor NDE 1HgE3	3/22/2017 11:04:34 AM	4.453	gE
Motor NDE 1V	3/22/2017 11:04:48 AM	0.845	mm/s
Motor NDE 1A	3/22/2017 11:04:58 AM	0.917	mm/s
Motor DE 2H	3/22/2017 11:05:09 AM	1.099	mm/s
Motor DE HA	3/22/2017 11:05:12 AM	0.331	g
Motor DE 2HgE3	3/22/2017 11:05:15 AM	3.125	gE
Motor DE 2V	3/22/2017 11:05:26 AM	1.081	mm/s
Motor DE 2A	3/22/2017 11:05:36 AM	1.279	mm/s
Fan DE 3HL-V	3/22/2017 11:05:48 AM	0.946	mm/s
Fan DE 3H	3/22/2017 11:05:54 AM	0.933	mm/s
Fan DE HA	3/22/2017 11:05:57 AM	0.224	g
Fan DE 3HgE3	3/22/2017 11:06:00 AM	1.350	gE
Fan DE 3V	3/22/2017 11:06:14 AM	0.580	mm/s
Fan DE 3A	3/22/2017 11:06:24 AM	0.930	mm/s
Fan NDE 4HL	3/22/2017 11:06:33 AM	0.939	mm/s
Fan NDE 4H	3/22/2017 11:06:38 AM	0.984	mm/s
Fan NDE HA	3/22/2017 11:06:41 AM	0.230	g
Fan NDE 4HgE3	3/22/2017 11:06:44 AM	2.260	gE
Fan NDE 4V	3/22/2017 11:06:55 AM	1.303	mm/s
Fan NDE 4A	3/22/2017 11:07:06 AM	1.669	mm/s

Vibration Analysis Report 22.03.2017		SKF RELIABILITY SYSTEMS	
EQUIPMENT S/NO.	6	EQUIPMENT NAME	COATING FUGITIVE FAN
MACHINE SKETCH			

Vibration Limits for this equipment – Velocity in mm/sec (rms)			
POSITION	NORMAL	ALERT	ALARM
MOTOR / BLOWER	7.1	7.1 to 18.0	Above 18.0

EQUIPMENT SPECIFICATIONS				
DESCRIPTION	DRIVE	DRIVEN	MOUNTING	Y/N
Rated Speed	1460 RPM	1460 RPM	At Ground	Y
Power Rating	18.5 KW	NA	On Rigid Concrete	N
Bearing No. (DE/NDE)	6310 ZZ 6210 ZZ	22213 EK 22213 EK	Above Ground Level On Vibro Pad	N Y
Pulley Dia	250	250	On Steel Structure	Y

HIGHEST AMPLITUDES & HEALTH CONDITION			
LOCATION	VELOCITY (mm/sec) in rms		HEALTH CONDITION
	Previous (23.01.2017)	Present (22.03.2017)	
MOTOR	6.2	9.8	ALERT
BLOWER	10.1	11.9	ALERT

OBSERVATIONS:

This equipment is indicating an "ALERT" behavior with maximum vibration amplitudes of 11.9 mm/s recorded in the Blower bearings.

ANALYSIS:

- Symptoms of minor imbalance has also been indicated including inadequate base rigidity.
- Symptoms indicating belt pulley misalignment observed in FFT analysis.

ACTION PLAN:

1. It is suggested to verify belt pulley alignment and assemble the missing belt as shown during measurement. Also review coating cleaning frequency as a preliminary action and arrange to provide proper stiffening to the structure to achieve adequate rigidity at all measurement location, Meanwhile it is also suggested to perform dynamic balancing of fan impeller after improving base structure rigidity.

Last Measurement Report

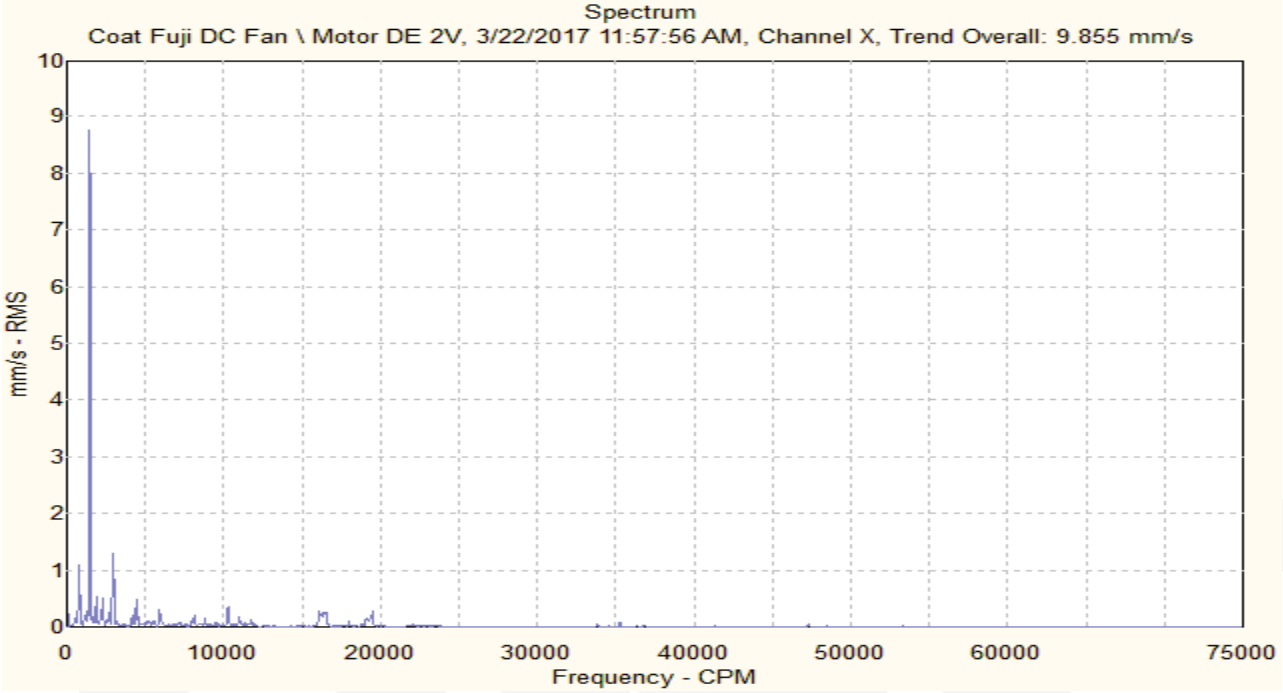
Source: Coat Fuji DC Fan

4/7/2017 12:26:26 PM

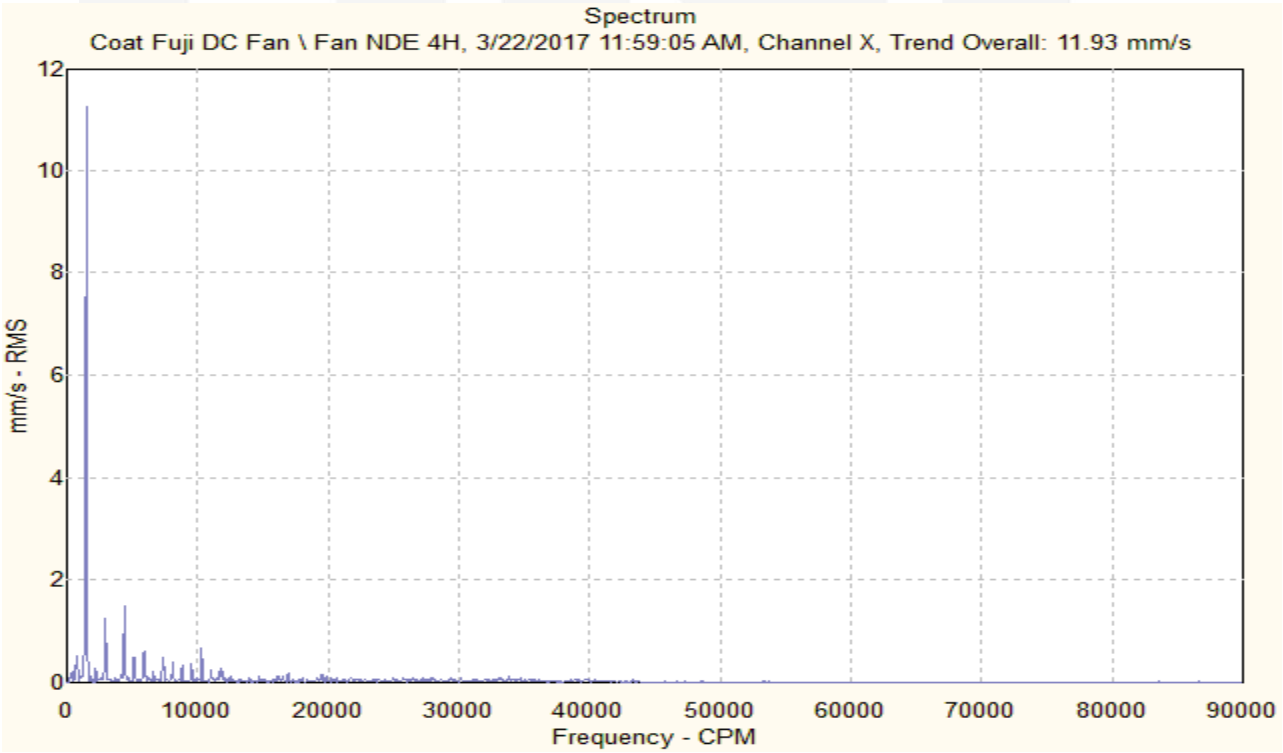
Last Measurement

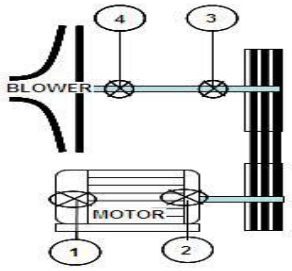
POINT name	Date/Time	Last value	Units
Motor NDE 1H	3/22/2017 11:56:59 AM	4.666	mm/s
Motor NDE 1HL	3/22/2017 11:57:03 AM	5.142	mm/s
Motor NDE HA	3/22/2017 11:57:07 AM	0.207	g
Motor NDE 1HgE3	3/22/2017 11:57:10 AM	1.123	gE
Motor NDE 1V	3/22/2017 11:57:20 AM	8.539	mm/s
Motor NDE 1A	3/22/2017 11:57:29 AM	3.932	mm/s
Motor DE 2H	3/22/2017 11:57:37 AM	6.899	mm/s
Motor DE HA	3/22/2017 11:57:40 AM	0.448	g
Motor DE 2HgE3	3/22/2017 11:57:44 AM	1.752	gE
Motor DE 2V	3/22/2017 11:57:56 AM	9.855	mm/s
Motor DE 2A	3/22/2017 11:58:05 AM	6.739	mm/s
Fan DE 3HL-V	3/22/2017 11:58:19 AM	8.545	mm/s
Fan DE 3H	3/22/2017 11:58:23 AM	8.717	mm/s
Fan DE HA	3/22/2017 11:58:26 AM	0.338	g
Fan DE 3HgE3	3/22/2017 11:58:29 AM	3.502	gE
Fan DE 3V	3/22/2017 11:58:40 AM	6.624	mm/s
Fan DE 3A	3/22/2017 11:58:50 AM	7.837	mm/s
Fan NDE 4HL	3/22/2017 11:59:02 AM	11.013	mm/s
Fan NDE 4H	3/22/2017 11:59:05 AM	11.935	mm/s
Fan NDE HA	3/22/2017 11:59:08 AM	0.400	g
Fan NDE 4HgE3	3/22/2017 11:59:12 AM	3.304	gE
Fan NDE 4V	3/22/2017 11:59:22 AM	8.737	mm/s
Fan NDE 4A	3/22/2017 11:59:33 AM	5.977	mm/s

Coat Fuji DC Fan \ Motor DE 2V



Coat Fuji DC Fan \ Fan NDE 4H



Vibration Analysis Report 22.03.2017		SKF RELIABILITY SYSTEMS	
EQUIPMENT S/NO.	7	EQUIPMENT NAME	UN-COATING FUGITIVE FAN
MACHINE SKETCH			

Vibration Limits for this equipment – Velocity in mm/sec (rms)			
POSITION	NORMAL	ALERT	ALARM
MOTOR / BLOWER	7.1	7.1 to 18.0	Above 18.0

EQUIPMENT SPECIFICATIONS				
DESCRIPTION	DRIVE	DRIVEN	MOUNTING	Y/N
Rated Speed	1460 RPM	1460 RPM	At Ground	Y
Power Rating	18.5 KW	NA	On Rigid Concrete	N
Bearing No. (DE/NDE)	6310 ZZ 6210 ZZ	22213 EK 22213 EK	Above Ground Level On Vibro Pad	N Y
Pulley Dia	250	250	On Steel Structure	Y

HIGHEST AMPLITUDES & HEALTH CONDITION			
LOCATION	VELOCITY (mm/sec) in rms		HEALTH CONDITION
	Previous (23.01.2017)	Present (22.03.2017)	
MOTOR	12.4	8.4	ALERT
BLOWER	10.1	7.2	ALERT

OBSERVATIONS:

This equipment is indicating an "ALERT" behavior with maximum vibration amplitudes of 8.4 mm/s recorded in the Motor bearings.

ANALYSIS:

- Vibrations decreased slightly from the past measurement history.
- Symptoms of structural looseness indicated in FFT spectrum and also considerable unbalance in fan rotor coupled with introductory bearing fault indications observed in fan bearings.

ACTION PLAN:

1. Motor base rigidity is to be improved. Check vibration pads condition for proper function and provide additional rigidity to the system. Check the base foundation frame and bolts for adequate rigidity. Fan bearings are to be inspected for any abnormality and to be replaced if needed. Scheduled coating cleaning to be followed.

Last Measurement Report

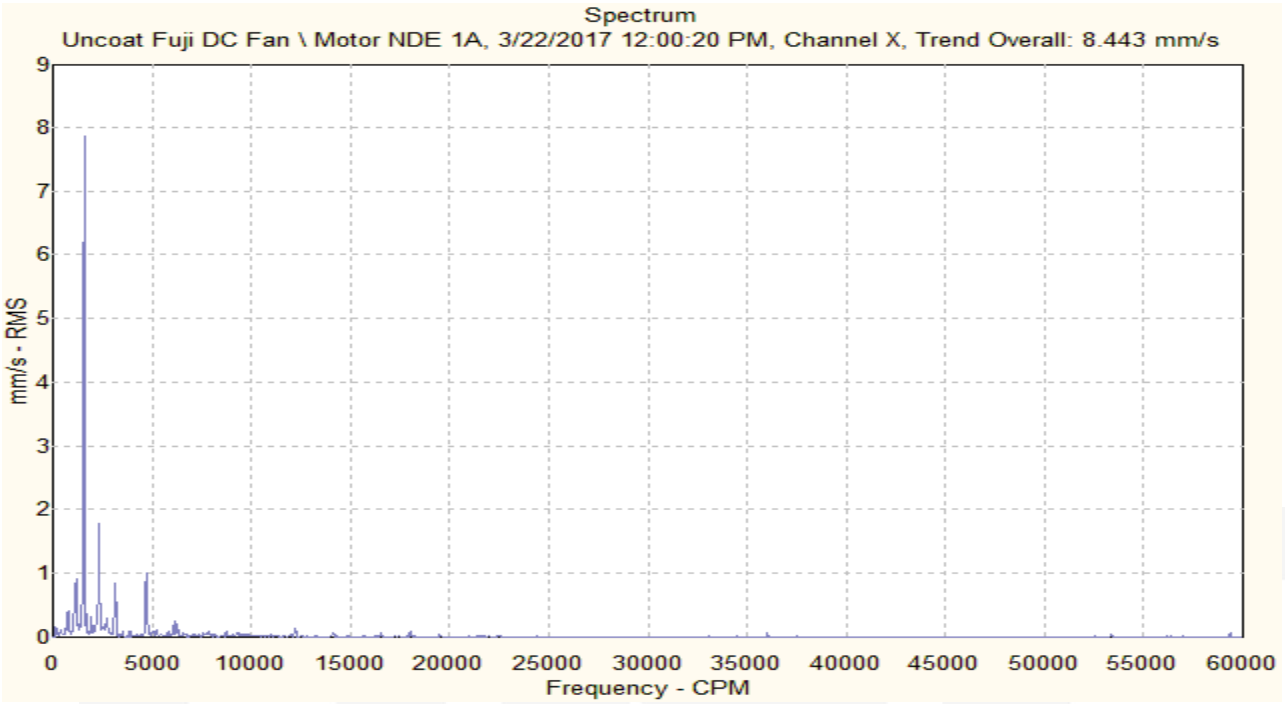
Source: Uncoat Fuji DC Fan

4/7/2017 12:27:44 PM

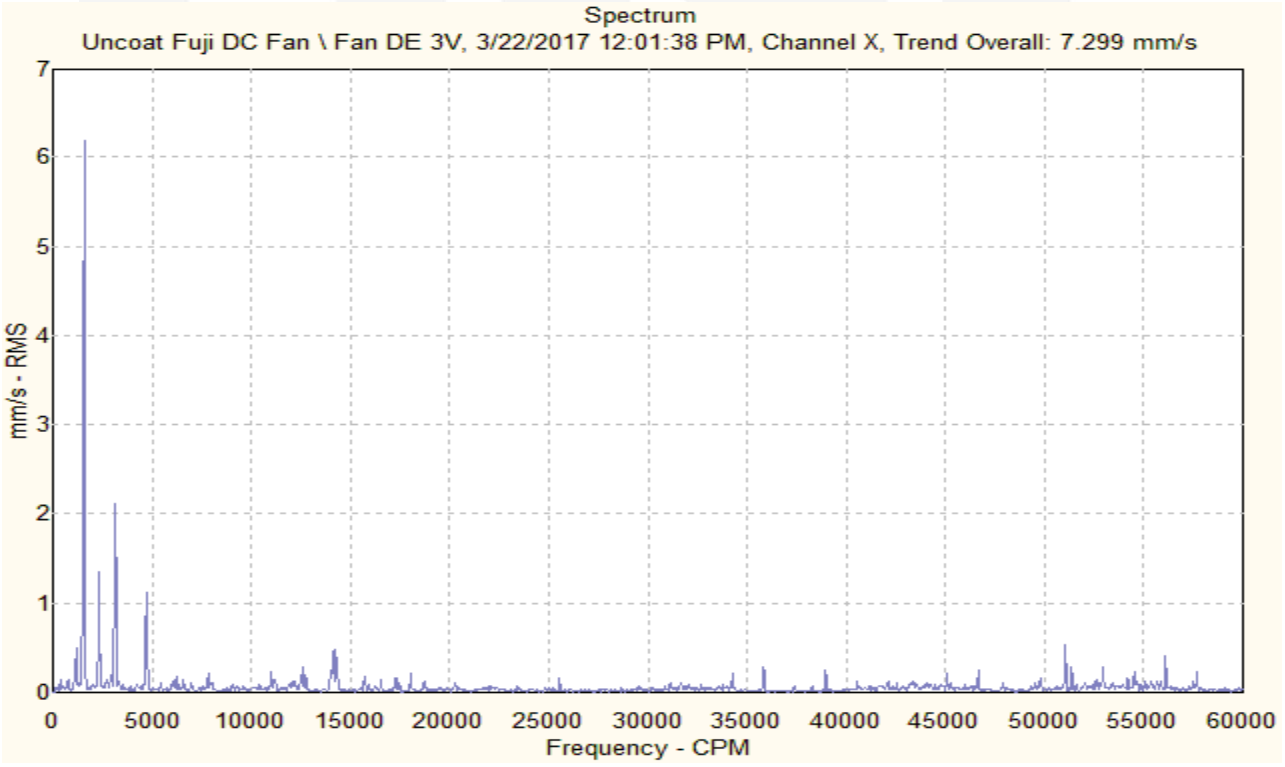
Last Measurement

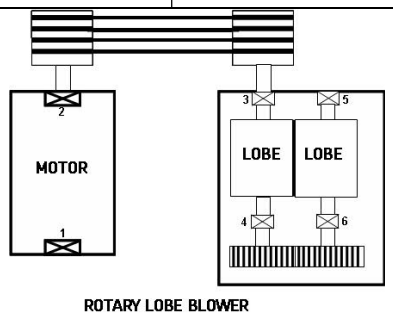
POINT name	Date/Time	Last value	Units
Motor NDE 1H	3/22/2017 11:59:49 AM	7.025	mm/s
Motor NDE 1HL	3/22/2017 11:59:53 AM	7.103	mm/s
Motor NDE HA	3/22/2017 11:59:56 AM	0.305	g
Motor NDE 1HgE3	3/22/2017 11:59:59 AM	1.223	gE
Motor NDE 1V	3/22/2017 12:00:10 PM	7.934	mm/s
Motor NDE 1A	3/22/2017 12:00:20 PM	8.443	mm/s
Motor DE 2H	3/22/2017 12:00:28 PM	7.681	mm/s
Motor DE HA	3/22/2017 12:00:31 PM	0.286	g
Motor DE 2HgE3	3/22/2017 12:00:35 PM	2.183	gE
Motor DE 2V	3/22/2017 12:00:45 PM	6.499	mm/s
Motor DE 2A	3/22/2017 12:00:54 PM	7.850	mm/s
Fan DE 3HL-V	3/22/2017 12:01:11 PM	6.964	mm/s
Fan DE 3H	3/22/2017 12:01:15 PM	6.954	mm/s
Fan DE HA	3/22/2017 12:01:18 PM	3.041	g
Fan DE HEA 1	3/22/2017 12:01:24 PM	30.134	gE
Fan DE 3V	3/22/2017 12:01:38 PM	7.299	mm/s
Fan DE 3A	3/22/2017 12:01:49 PM	3.785	mm/s
Fan NDE 4HL	3/22/2017 12:02:02 PM	4.094	mm/s
Fan NDE 4H	3/22/2017 12:02:05 PM	4.427	mm/s
Fan NDE HA	3/22/2017 12:02:08 PM	1.577	g
Fan NDE HEA1	3/22/2017 12:02:11 PM	9.499	gE
Fan NDE 4V	3/22/2017 12:02:22 PM	4.990	mm/s
Fan NDE 4A	3/22/2017 12:02:35 PM	3.609	mm/s

Uncoat Fuji DC Fan \ Motor NDE 1A



Uncoat Fuji DC Fan \ Fan DE 3V



Vibration Analysis Report 22.03.2017		SKF RELIABILITY SYSTEMS	
EQUIPMENT S/NO.	8	EQUIPMENT NAME	UNCOATED TRANSFER BLOWER
MACHINE SKETCH			

Vibration Limits for this equipment – Velocity in mm/sec (rms)			
POSITION	NORMAL	ALERT	ALARM
MOTOR / BLOWER	7.1	7.2 to 18.0	Above 18.0

EQUIPMENT SPECIFICATIONS				
DESCRIPTION	DRIVE	DRIVEN	MOUNTING	Y/N
Rated Speed	1470 RPM	1158 RPM	At Ground	Y
Power Rating	55 KW	NA	On Rigid Concrete	N
Bearing No. (DE/NDE)	6314 6313	22310E/C3 2310 EC	Above Ground Level	N
			On Vibro Pad	N
Pulley Dia	315	400	On Steel Structure	Y

HIGHEST AMPLITUDES & HEALTH CONDITION			
LOCATION	VELOCITY (mm/sec) in rms		HEALTH CONDITION
	Previous (23.01.2017)	Present (22.03.2017)	
MOTOR	2.2	2.7	NORMAL
BLOWER	3.7	4.4	NORMAL

OBSERVATIONS:

This equipment is indicating an "NORMAL" behavior with maximum vibration amplitudes of 4.4 mm/s recorded in the Blower bearings.

ANALYSIS:

- Slight increment observed in the vibrations due to partial load operation.

ACTION PLAN:

1. Immediate corrections are not required – Monitor the future trend.

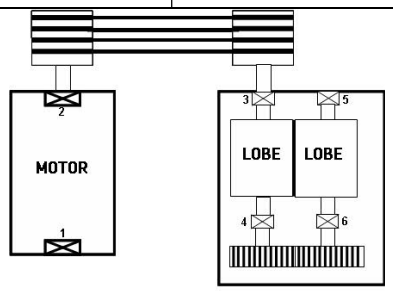
Last Measurement Report

Source: Uncoat Trans Blower

4/7/2017 12:29:06 PM

Last Measurement

POINT name	Date/Time	Last value	Units
Motor NDE 1H	3/22/2017 11:51:41 AM	2.725	mm/s
Motor NDE HA	3/22/2017 11:51:44 AM	0.403	g
Motor NDE 1HgE3	3/22/2017 11:51:47 AM	1.586	gE
Motor NDE 1V	3/22/2017 11:51:58 AM	2.121	mm/s
Motor NDE 1A	3/22/2017 11:52:11 AM	2.291	mm/s
Motor DE 2H	3/22/2017 11:52:22 AM	2.233	mm/s
Motor DE HA	3/22/2017 11:52:25 AM	0.365	g
Motor DE 2HgE3	3/22/2017 11:52:28 AM	1.731	gE
Motor DE 2V	3/22/2017 11:52:39 AM	2.539	mm/s
Motor DE 2A	3/22/2017 11:52:48 AM	2.187	mm/s
Fan DE 3H	3/22/2017 11:53:01 AM	2.934	mm/s
Fan DE HA	3/22/2017 11:53:04 AM	0.606	g
Fan DE 3HgE3	3/22/2017 11:53:07 AM	8.567	gE
Fan DE 3V	3/22/2017 11:53:26 AM	4.283	mm/s
Fan DE 3A	3/22/2017 11:53:37 AM	2.997	mm/s
Fan NDE 4H	3/22/2017 11:53:48 AM	3.999	mm/s
Fan NDE HA	3/22/2017 11:53:51 AM	0.888	g
Fan NDE 4HgE3	3/22/2017 11:53:54 AM	8.494	gE
Fan NDE 4V	3/22/2017 11:54:05 AM	2.803	mm/s
Fan NDE 4A	3/22/2017 11:54:16 AM	3.029	mm/s
Point 5 HV	3/22/2017 11:54:27 AM	3.050	mm/s
Point 5 HEA	3/22/2017 11:54:31 AM	8.696	gE
Point 5 VV	3/22/2017 11:54:42 AM	3.321	mm/s
Point 5 AV	3/22/2017 11:54:54 AM	4.426	mm/s
Point 6 HV	3/22/2017 11:55:06 AM	3.416	mm/s
Point 6 HEA	3/22/2017 11:55:10 AM	8.164	gE
Point 6 VV	3/22/2017 11:55:21 AM	3.927	mm/s
Point 6 AV	3/22/2017 11:55:31 AM	4.414	mm/s

Vibration Analysis Report 22.03.2017		SKF RELIABILITY SYSTEMS	
EQUIPMENT S/NO.	9	EQUIPMENT NAME	COATED TRANSFER BLOWER
MACHINE SKETCH		 ROTARY LOBE BLOWER	

Vibration Limits for this equipment – Velocity in mm/sec (rms)			
POSITION	NORMAL	ALERT	ALARM
MOTOR / BLOWER	7.1	7.2 to 18.0	Above 18.0

EQUIPMENT SPECIFICATIONS				
DESCRIPTION	DRIVE	DRIVEN	MOUNTING	Y/N
Rated Speed	1475 RPM	1100 RPM	At Ground	Y
Power Rating	45 KW	NA	On Rigid Concrete	N
Bearing No. (DE/NDE)	6313 6313	22310E/C3 2310 EC	Above Ground Level On Vibro Pad	N N
Pulley Dia	250	335	On Steel Structure	Y

HIGHEST AMPLITUDES & HEALTH CONDITION			
LOCATION	VELOCITY (mm/sec) in rms		HEALTH CONDITION
	Previous (23.01.2017)	Present (22.03.2017)	
MOTOR	4.4	4.3	NORMAL
BLOWER	4.8	4.7	NORMAL

OBSERVATIONS:

This equipment is indicating an "NORMAL" behavior with maximum vibration amplitudes of 4.7 mm/s recorded in the Blower bearings.

ANALYSIS:

- The health condition of the equipment is NORMAL as per ISO standards after root blower replacement.

ACTION PLAN:

1. Immediate corrections are not required – Monitor the future trend.

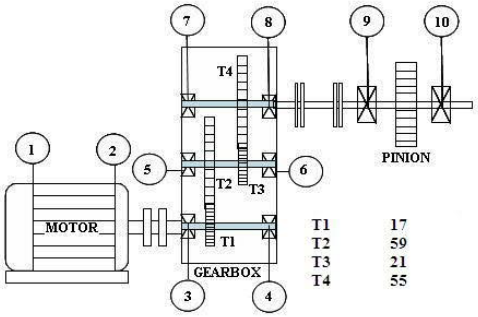
Last Measurement Report

Source: Coat. Trans Blower

4/7/2017 12:29:42 PM

Last Measurement

POINT name	Date/Time	Last value	Units
Motor NDE 1H	3/22/2017 11:47:10 AM	3.878	mm/s
Motor NDE 1HL	3/22/2017 11:47:14 AM	4.051	mm/s
Motor NDE HA	3/22/2017 11:47:17 AM	0.251	g
Motor NDE 1HgE3	3/22/2017 11:47:20 AM	1.943	gE
Motor NDE 1V	3/22/2017 11:47:31 AM	4.163	mm/s
Motor NDE 1A	3/22/2017 11:47:42 AM	2.967	mm/s
Motor DE 2H	3/22/2017 11:47:51 AM	3.179	mm/s
Motor DE HA	3/22/2017 11:47:54 AM	0.689	g
Motor DE 2HgE3	3/22/2017 11:47:57 AM	2.522	gE
Motor DE 2V	3/22/2017 11:48:08 AM	2.878	mm/s
Motor DE 2A	3/22/2017 11:48:18 AM	4.313	mm/s
Fan DE 3H	3/22/2017 11:48:27 AM	4.465	mm/s
Fan DE HA	3/22/2017 11:48:30 AM	0.956	g
Fan DE 3HgE3	3/22/2017 11:48:33 AM	10.232	gE
Fan DE 3V	3/22/2017 11:48:47 AM	2.866	mm/s
Fan DE 3A	3/22/2017 11:48:58 AM	4.267	mm/s
Fan NDE 4H	3/22/2017 11:49:08 AM	4.312	mm/s
Fan NDE 4V	3/22/2017 11:49:21 AM	3.197	mm/s
Fan NDE HA	3/22/2017 11:49:30 AM	0.757	g
Fan NDE 4HgE3	3/22/2017 11:49:33 AM	0.008	gE
Fan NDE 4A	3/22/2017 11:49:44 AM	4.292	mm/s
Point 5 HV	3/22/2017 11:49:52 AM	4.214	mm/s
Point 5 HEA	3/22/2017 11:49:56 AM	13.183	gE
Point 5 VV	3/22/2017 11:50:07 AM	3.845	mm/s
Point 5 AV	3/22/2017 11:50:17 AM	4.113	mm/s
Point 6 HV	3/22/2017 11:50:27 AM	4.790	mm/s
Point 6 HEA	3/22/2017 11:50:31 AM	10.121	gE
Point 6 VV	3/22/2017 11:50:44 AM	2.904	mm/s
Point 6 AV	3/22/2017 11:50:53 AM	4.104	mm/s

Vibration Analysis Report 22.03.2017		SKF RELIABILITY SYSTEMS	
EQUIPMENT S/NO.	10	EQUIPMENT NAME	BALL MILL
MACHINE SKETCH			

Vibration Limits for this equipment – Velocity in mm/sec (rms)			
POSITION	NORMAL	ALERT	ALARM
MOTOR/GEARBOX/PINION	4.5	4.5 to 11.2	Above 11.2

EQUIPMENT SPECIFICATIONS				
DESCRIPTION	DRIVE	DRIVEN	MOUNTING	Y/N
Rated Speed	1500 RPM	GB O/P-166.76 BM speed-20	At Ground	Y
Power Rating	640 KW	NA	On Rigid Concrete	Y
Bearing No. (DE/NDE)	6322/C3 VL 20171 6324	Pos 9-23140 CC/W33 Pos 10-23140 CC/W33	Above Ground Level	N
			On Vibro Pad	N
Pulley Dia	NA	NA	On Steel Structure	N

HIGHEST AMPLITUDES & HEALTH CONDITION			
LOCATION	VELOCITY (mm/sec) in rms		HEALTH CONDITION
	Previous (23.01.2017)	Present (22.03.2017)	
MOTOR	2.1	2.0	NORMAL
GEARBOX	3.9	3.2	NORMAL
PINION	3.4	3.7	NORMAL

OBSERVATIONS:

This equipment is indicating an "NORMAL" behavior with maximum vibration amplitudes of 3.7 mm/s recorded at the Gearbox bearings.

ANALYSIS:

- Vibrations are stable almost at all the measurement locations.
- Symptoms of improper tooth loading symptoms observed at gearbox intermediate gear.

ACTION PLAN:

1. Amplitude of GMFs are in trend at gearbox intermediate shaft.
2. Second order GMF is dominating the FFT spectra. It is suggested to keep close monitoring over any abnormal behavior of equipment.

Last Measurement Report

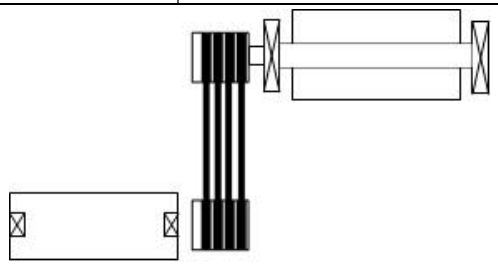
Source: BALL MILL

4/7/2017 12:30:15 PM

	Last Measurement		
POINT name	**Date/Time**	**Last value**	**Units**
MOTOR NDE HV	3/22/2017 11:23:38 AM	1.547	mm/s
MOTOR NDE HV.1	3/22/2017 11:23:41 AM	1.147	mm/s
MOTOR NDE HA	3/22/2017 11:23:44 AM	0.395	g
MOTOR NDE HEA 1	3/22/2017 11:23:48 AM	1.169	gE
MOTOR NDE HEA 2	3/22/2017 11:23:51 AM	7.367	gE
MOTOR NDE VV	3/22/2017 11:24:01 AM	2.032	mm/s
MOTOR NDE AV	3/22/2017 11:24:11 AM	1.162	mm/s
MOTOR DE HV	3/22/2017 11:24:24 AM	1.631	mm/s
MOTOR DE HV.1	3/22/2017 11:24:27 AM	1.646	mm/s
MOTOR DE HA	3/22/2017 11:24:30 AM	0.438	g
MOTOR DE HEA 1	3/22/2017 11:24:33 AM	1.649	gE
MOTOR DE HEA 2	3/22/2017 11:24:37 AM	4.499	gE
MOTOR DE VV	3/22/2017 11:24:47 AM	1.349	mm/s
MOTOR DE AV	3/22/2017 11:24:59 AM	1.661	mm/s
GB I/P DE HV-H	3/22/2017 11:31:03 AM	2.572	mm/s
GB I/P DE HV.L	3/22/2017 11:31:07 AM	1.566	mm/s
GB I/P DE HA	3/22/2017 11:31:10 AM	3.123	g
GB I/P DE HEA 1	3/22/2017 11:31:14 AM	3.471	gE
GB I/P DE HEA 2	3/22/2017 11:31:17 AM	7.312	gE
GB I/P DE VV	3/22/2017 11:31:29 AM	1.580	mm/s
GB I/P DE AV	3/22/2017 11:31:40 AM	1.746	mm/s
GB I/P NDE HV	3/22/2017 11:31:55 AM	1.644	mm/s
GB I/P NDE HV.L	3/22/2017 11:31:58 AM	3.289	mm/s
GB I/P NDE HA	3/22/2017 11:32:01 AM	4.465	g
GB I/P NDE HEA1	3/22/2017 11:32:04 AM	3.467	gE
GB I/P NDE HEA2	3/22/2017 11:32:07 AM	6.095	gE
GB I/P NDE VV	3/22/2017 11:32:19 AM	1.590	mm/s
GB I/P NDE AV	3/22/2017 11:32:32 AM	1.538	mm/s
GB INTER DE HV	3/22/2017 11:25:18 AM	1.435	mm/s
GB INTER DE HV.L	3/22/2017 11:25:22 AM	1.302	mm/s
GB INTER DE HA	3/22/2017 11:25:25 AM	1.857	g
GB INTER DE HEA1	3/22/2017 11:25:28 AM	2.588	gE
GB INTER DE HEA 2	3/22/2017 11:25:34 AM	20.316	gE

Last Measurement

POINT name	Date/Time	Last value	Units
GB INTER DE VV	3/22/2017 11:25:45 AM	1.488	mm/s
GB INTER DE - AV	3/22/2017 11:25:55 AM	1.947	mm/s
GB INTER NDE HV	3/22/2017 11:32:48 AM	1.709	mm/s
GB INTER NDE HV.L	3/22/2017 11:32:51 AM	1.651	mm/s
GB INTER NDE HA	3/22/2017 11:32:54 AM	3.118	g
GB INTER NDE HEA1	3/22/2017 11:32:58 AM	3.417	gE
GB INTER NDE HEA2	3/22/2017 11:33:01 AM	6.727	gE
GB INTER NDE VV	3/22/2017 11:33:16 AM	2.286	mm/s
GB INTER NDE AV	3/22/2017 11:33:28 AM	1.927	mm/s
GB O/P DE - HV-L	3/22/2017 11:26:34 AM	1.042	mm/s
GB O/P DE - HV.H	3/22/2017 11:26:39 AM	1.142	mm/s
GB O/P DE HA	3/22/2017 11:26:44 AM	0.188	g
GB O/P DE HEA 1	3/22/2017 11:26:56 AM	1.967	gE
GB O/P DE HEA 2	3/22/2017 11:27:08 AM	4.727	gE
GB O/P DE VV	3/22/2017 11:27:24 AM	1.030	mm/s
GB O/P DE - AV	3/22/2017 11:27:35 AM	1.414	mm/s
GB O/P NDE HV-L	3/22/2017 11:27:57 AM	1.238	mm/s
GB O/P NDE HV.H	3/22/2017 11:28:02 AM	1.375	mm/s
GB O/P NDE HA	3/22/2017 11:28:07 AM	0.274	g
GB O/P NDE HEA1	3/22/2017 11:28:19 AM	1.402	gE
GB O/P NDE HEA2	3/22/2017 11:28:31 AM	3.214	gE
GB O/P NDE VV	3/22/2017 11:28:48 AM	1.397	mm/s
GB O/P NDE AV	3/22/2017 11:28:59 AM	1.499	mm/s
PINION DE HV	3/22/2017 11:29:19 AM	3.396	mm/s
PINION DE HV.H	3/22/2017 11:29:26 AM	3.560	mm/s
PINION DE HEA1	3/22/2017 11:29:38 AM	1.975	gE
PINION DE HEA2	3/22/2017 11:29:50 AM	1.573	gE
PINION DE VV	3/22/2017 11:30:07 AM	3.210	mm/s
PINION DE AV	3/22/2017 11:30:25 AM	1.916	mm/s
PINION NDE HV	3/22/2017 11:33:57 AM	3.711	mm/s
PINION NDE HV.H	3/22/2017 11:34:04 AM	3.788	mm/s
PINION NDE HEA1	3/22/2017 11:34:16 AM	2.434	gE
PINION NDE HEA2	3/22/2017 11:34:27 AM	1.258	gE
PINION NDE VV	3/22/2017 11:34:43 AM	2.674	mm/s
PINION NDE AV	3/22/2017 11:34:59 AM	2.541	mm/s

Vibration Analysis Report 22.03.2017		SKF RELIABILITY SYSTEMS	
EQUIPMENT S/NO.	11	EQUIPMENT NAME	HAMMER MILL – RIGHT (DRIVE NO.1)
MACHINE SKETCH			

Vibration Limits for this equipment – Velocity in mm/sec (rms)			
POSITION	NORMAL	ALERT	ALARM
MOTOR / HAMMER SHAFT	7.1	7.2 to 18.0	Above 18.0

EQUIPMENT SPECIFICATIONS				
DESCRIPTION	DRIVE	DRIVEN	MOUNTING	Y/N
Rated Speed	1480 RPM	1200 RPM	At Ground	N
Power Rating	160 KW	NA	On Rigid Concrete	Y
Bearing No. (DE/NDE)	6319 6319	22320 C3 22320 C3	Above Ground Level On Vibro Pad	Y Y
Pulley Dia	400	500	On Steel Structure	N

HIGHEST AMPLITUDES & HEALTH CONDITION			
LOCATION	VELOCITY (mm/sec) in rms		HEALTH CONDITION
	Previous (23.01.2017)	Present (22.03.2017)	
MOTOR	8.1	7.6	ALERT
HAMMER SHAFT	8.3 (23.5 gE)	5.7 (23.4 gE)	ALERT

OBSERVATIONS:

This equipment is indicating an "ALERT" behavior with maximum vibration amplitudes of 7.6 mm/s recorded in the Motor bearings.

ANALYSIS:

- motor bearings varying within a long range due to inadequate rigidity to the system, hence can't be kept under NORMAL range.

ACTION PLAN:

1. High vibrations are due to flexible base rigidity. As the vibrations are now almost stable, OEM to be consult for acceptable vibration range for such flexible structure in order to verify the equipment health condition. Trend monitoring is suggested.

Last Measurement Report

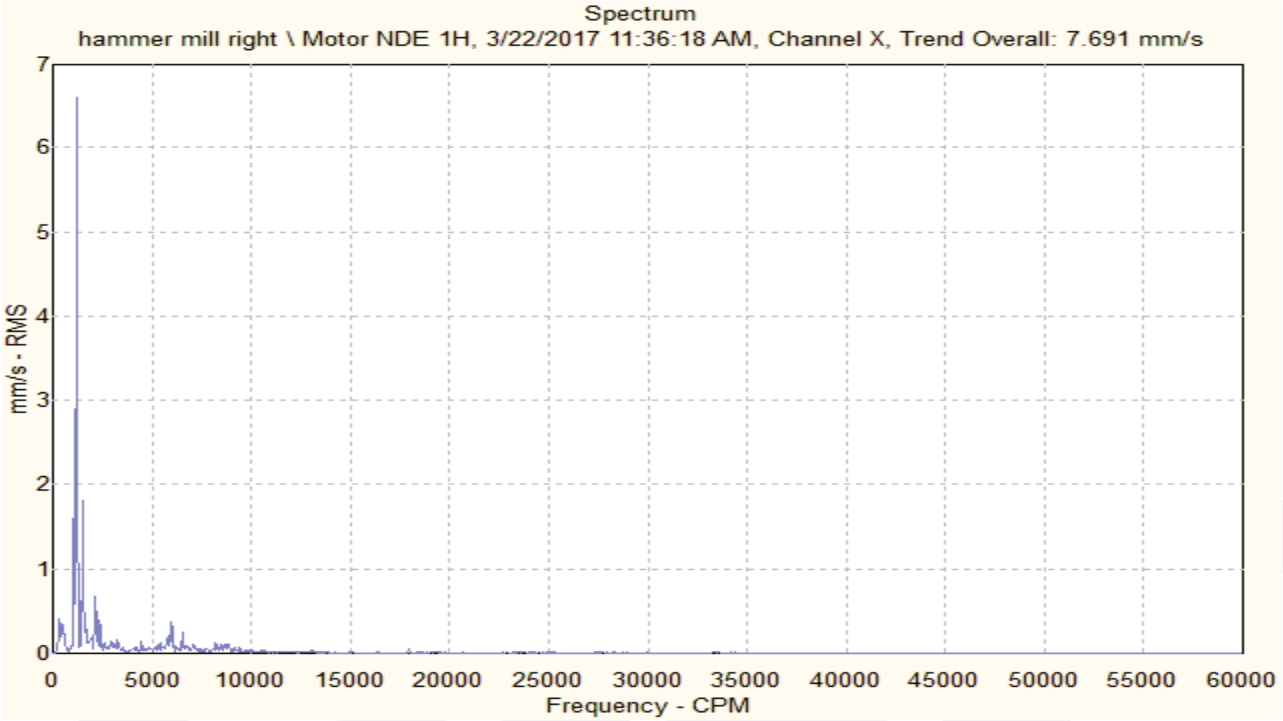
Source: hammer mill right

4/7/2017 12:30:58 PM

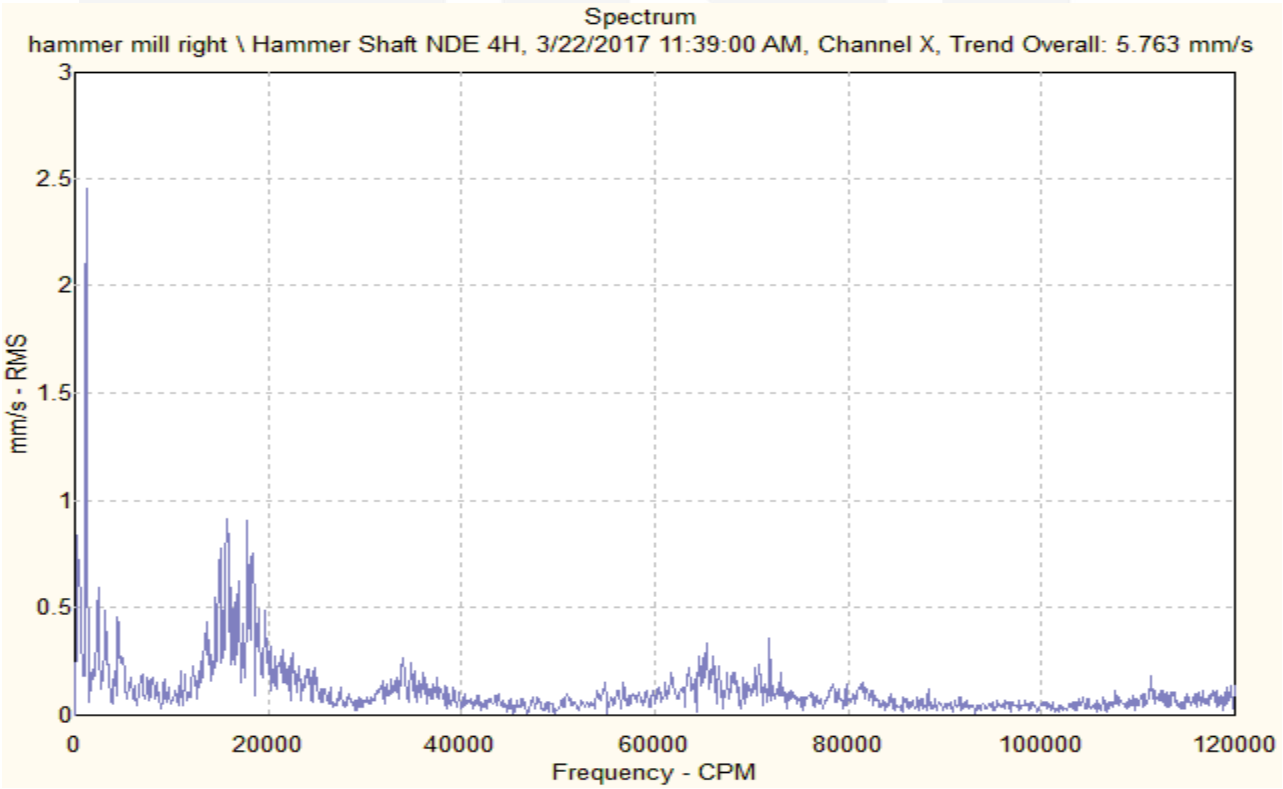
Last Measurement

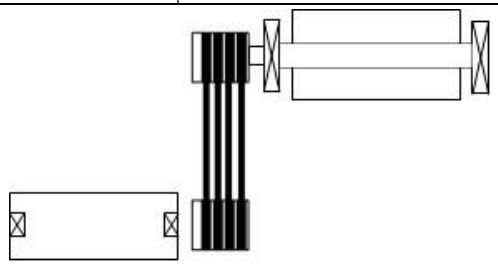
POINT name	Date/Time	Last value	Units
Motor NDE 1H	3/22/2017 11:36:18 AM	7.691	mm/s
Motor NDE 1HH	3/22/2017 11:36:21 AM	6.036	mm/s
Motor NDE HA	3/22/2017 11:36:24 AM	0.226	g
Motor NDE 1HgE3	3/22/2017 11:36:27 AM	1.165	gE
Motor NDE 1V	3/22/2017 11:36:47 AM	9.359	mm/s
Motor NDE 1A	3/22/2017 11:36:59 AM	7.248	mm/s
Motor DE 2HL	3/22/2017 11:37:11 AM	3.683	mm/s
Motor DE 2H	3/22/2017 11:37:14 AM	5.597	mm/s
Motor DE HA	3/22/2017 11:37:17 AM	0.179	g
Motor DE 2HgE3	3/22/2017 11:37:21 AM	1.998	gE
Motor DE 2V	3/22/2017 11:37:31 AM	7.409	mm/s
Motor DE 2A	3/22/2017 11:37:41 AM	3.190	mm/s
Hammer Shaft DE 3HL	3/22/2017 11:37:57 AM	3.963	mm/s
Hammer Shaft DE 3H	3/22/2017 11:38:00 AM	3.900	mm/s
Hammer Shaft DE HA	3/22/2017 11:38:03 AM	1.135	g
Hammer ShaftDE 3HgE3	3/22/2017 11:38:08 AM	19.614	gE
Hammer Shaft DE 3V	3/22/2017 11:38:23 AM	3.250	mm/s
Hammer Shaft DE 3A	3/22/2017 11:38:36 AM	3.877	mm/s
Hammer Shaft NDE 4HL	3/22/2017 11:38:57 AM	4.996	mm/s
Hammer Shaft NDE 4H	3/22/2017 11:39:00 AM	5.763	mm/s
Hammer Shaft NDE HA	3/22/2017 11:39:16 AM	1.537	g
Hammer ShafNDE 4HgE3	3/22/2017 11:39:26 AM	23.482	gE
Hammer Shaft NDE 4V	3/22/2017 11:39:43 AM	5.445	mm/s
Hammer Shaft NDE 4A	3/22/2017 11:40:33 AM	3.784	mm/s

hammer mill right \ Motor NDE 1H



hammer mill right \ Hammer Shaft NDE 4H



Vibration Analysis Report 22.03.2017		SKF RELIABILITY SYSTEMS	
EQUIPMENT S/NO.	12	EQUIPMENT NAME	HAMMER MILL – LEFT (DRIVE NO.2)
MACHINE SKETCH			

Vibration Limits for this equipment – Velocity in mm/sec (rms)			
POSITION	NORMAL	ALERT	ALARM
MOTOR / HAMMER SHAFT	7.1	7.2 to 18.0	Above 18.0

EQUIPMENT SPECIFICATIONS				
DESCRIPTION	DRIVE	DRIVEN	MOUNTING	Y/N
Rated Speed	1480 RPM	1200 RPM	At Ground	N
Power Rating	160 KW	NA	On Rigid Concrete	Y
Bearing No. (DE/NDE)	6319 6319	22320 C3 22320 C3	Above Ground Level On Vibro Pad	Y Y
Pulley Dia	400	500	On Steel Structure	N

HIGHEST AMPLITUDES & HEALTH CONDITION			
LOCATION	VELOCITY (mm/sec) in rms		HEALTH CONDITION
	Previous (23.01.2017)	Present (22.03.2017)	
MOTOR	7.0	12.3	ALERT
HAMMER SHAFT	4.1 (28.6 gE)	6.7 (22.3 gE)	NORMAL

OBSERVATIONS:

This equipment is indicating an "ALERT" behavior with maximum vibration amplitudes of 12.3 mm/s recorded in the Motor bearings.

ANALYSIS:

- Motor bearings varying within a long range due to inadequate rigidity to the system, hence can't be kept under NORMAL range.

ACTION PLAN:

1. High vibrations are due to flexible base rigidity. As the vibrations are now almost stable, OEM to be consult for acceptable vibration range for such flexible structure in order to verify the equipment health condition. Trend monitoring is suggested.

Last Measurement Report

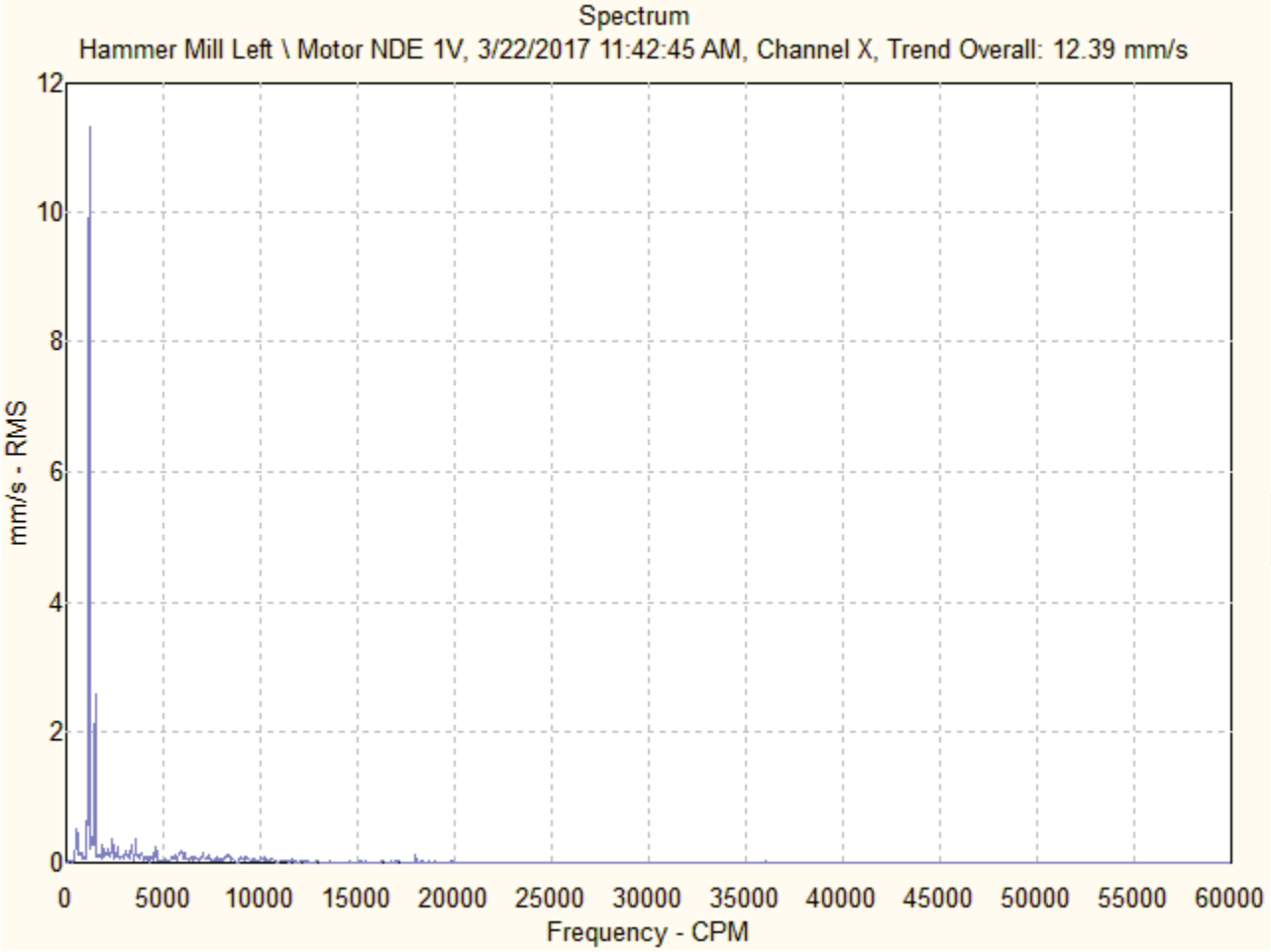
Source: Hammer Mill Left

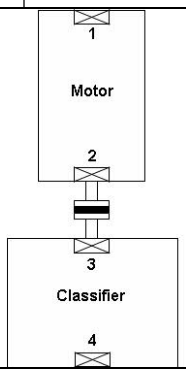
4/7/2017 12:32:16 PM

Last Measurement

POINT name	Date/Time	Last value	Units
Motor NDE 1H	3/22/2017 11:41:42 AM	4.891	mm/s
Motor NDE 1HL	3/22/2017 11:41:45 AM	2.899	mm/s
Motor NDE HA	3/22/2017 11:41:48 AM	0.251	g
Motor NDE 1HgE3	3/22/2017 11:41:51 AM	2.858	gE
Motor NDE 1V	3/22/2017 11:42:45 AM	12.386	mm/s
Motor NDE 1A	3/22/2017 11:43:04 AM	7.491	mm/s
Motor DE 2HL	3/22/2017 11:43:55 AM	3.028	mm/s
Motor DE 2H	3/22/2017 11:43:58 AM	5.914	mm/s
Motor DE HA	3/22/2017 11:44:01 AM	0.212	g
Motor DE 2HgE3	3/22/2017 11:44:04 AM	5.830	gE
Motor DE 2V	3/22/2017 11:44:17 AM	5.020	mm/s
Motor DE 2A	3/22/2017 11:44:28 AM	2.590	mm/s
Hammer Shaft DE 3HL	3/22/2017 11:44:43 AM	4.244	mm/s
Hammer Shaft DE 3H	3/22/2017 11:44:46 AM	3.746	mm/s
Hammer Shaft DE HA	3/22/2017 11:44:50 AM	1.033	g
Hammer Shaft DE 3Hg	3/22/2017 11:44:55 AM	19.616	gE
Hammer Shaft DE 3V	3/22/2017 11:45:08 AM	3.146	mm/s
Hammer Shaft DE 3A	3/22/2017 11:45:23 AM	3.827	mm/s
Hammer Shaft NDE 4HL	3/22/2017 11:45:40 AM	3.472	mm/s
Hammer Shaft NDE 4H	3/22/2017 11:45:44 AM	4.241	mm/s
Hammer ShaftNDE HA	3/22/2017 11:45:47 AM	1.093	g
Hammer Shaft NDE 4Hg	3/22/2017 11:45:51 AM	22.385	gE
Hammer Shaft NDE 4V	3/22/2017 11:46:02 AM	6.792	mm/s
Hammer Shaft NDE 4A	3/22/2017 11:46:13 AM	3.152	mm/s

Hammer Mill Left \ Motor NDE 1V



Vibration Analysis Report 22.03.2017		SKF RELIABILITY SYSTEMS	
EQUIPMENT S/NO.	13	EQUIPMENT NAME	CLASSIFIER DRIVE
MACHINE SKETCH			

Vibration Limits for this equipment – Velocity in mm/sec (rms)			
POSITION	NORMAL	ALERT	ALARM
MOTOR / CLASSIFIER	4.5	4.5 to 11.2	Above 11.2

EQUIPMENT SPECIFICATIONS				
DESCRIPTION	DRIVE	DRIVEN	MOUNTING	Y/N
Rated Speed	2300 RPM	2300 RPM	At Ground	N
Power Rating	160 KW	NA	On Rigid Concrete	N
Bearing No. (DE/NDE)	6319 C3 6316 C3	22214 C3 22214 C3 & 29414 E	Above Ground Level	Y
			On Vibro Pad	Y
Pulley Dia	NA	NA	On Steel Structure	Y

HIGHEST AMPLITUDES & HEALTH CONDITION			
LOCATION	VELOCITY (mm/sec) in rms		HEALTH CONDITION
	Previous (23.01.2017)	Present (22.03.2017)	
MOTOR	3.0	2.7	NORMAL
CLASSIFIER	4.3 (9.9 gE)	4.0 (11.1 gE)	NORMAL

OBSERVATIONS:

This equipment is indicating a "NORMAL" behavior with maximum vibration amplitudes of 4.0 mm/s recorded in the Classifier bearings.

ANALYSIS:

- Harmonics of 6th order fundamental frequency with slight sidebands of 930 CPM delta observed indicating abnormality with rotor assembly, indicating aerodynamic forces generated looseness in the system coupled with minor unbalance. Associated bearing fault frequency at classifier NDE bearing's outer race passing symptoms indicated with considerable amplitude.

ACTION PLAN:

1. It is suggested to inspect the classifier NDE bearing on earliest available opportunity for initial bearing inaccuracy & follow routine coating cleaning accumulated on classifier rotor. Rotor assembly, specifically newly modified vortex breaker blades to be inspected for any abnormality on available opportunity.

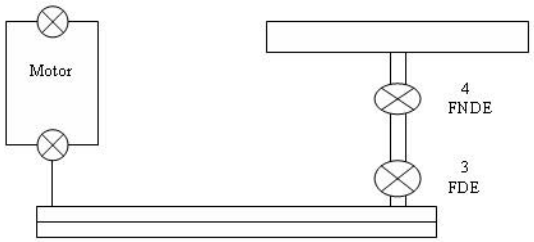
Last Measurement Report

Source: classifier

4/7/2017 12:33:03 PM

Last Measurement

POINT name	Date/Time	Last value	Units
Motor NDE 1HL	3/22/2017 10:51:30 AM	2.699	mm/s
Motor NDE 1H	3/22/2017 10:51:34 AM	2.712	mm/s
Motor NDE HA	3/22/2017 10:51:37 AM	0.481	g
Motor NDE 1HgE3	3/22/2017 10:51:40 AM	2.582	gE
Motor NDE 1V	3/22/2017 10:51:52 AM	1.208	mm/s
Motor NDE 1A	3/22/2017 10:52:03 AM	1.105	mm/s
Motor DE 2HL	3/22/2017 10:52:16 AM	1.171	mm/s
Motor DE 2H	3/22/2017 10:52:20 AM	1.439	mm/s
Motor DE HA	3/22/2017 10:52:23 AM	0.684	g
Motor DE 2HgE3	3/22/2017 10:52:26 AM	6.183	gE
Motor DE 2V	3/22/2017 10:52:38 AM	0.781	mm/s
Motor DE 2A	3/22/2017 10:52:49 AM	1.142	mm/s
Classifier Top 3HL	3/22/2017 10:53:03 AM	1.256	mm/s
Classifier Top 3H	3/22/2017 10:53:06 AM	1.282	mm/s
Classifier Top HA	3/22/2017 10:53:09 AM	0.084	g
Classifier Top 3Hg	3/22/2017 10:53:13 AM	1.917	gE
Classifier Top 3V	3/22/2017 10:53:25 AM	1.003	mm/s
Classifier Top 3A	3/22/2017 10:53:36 AM	0.721	mm/s
Classifier Bottom4HL	3/22/2017 11:02:31 AM	3.664	mm/s
Classifier Bottom 4H	3/22/2017 11:02:34 AM	4.013	mm/s
Classifier Bottom HA	3/22/2017 11:02:38 AM	1.265	g
Classifier Botto 4Hg	3/22/2017 11:02:41 AM	11.189	gE
Classifier Bottom 4V	3/22/2017 11:02:52 AM	2.625	mm/s
Classifier Bottom 4A	3/22/2017 11:03:14 AM	1.416	mm/s

Vibration Analysis Report 22.03.2017		SKF RELIABILITY SYSTEMS	
EQUIPMENT S/NO.	14	EQUIPMENT NAME	DE-AGGLOMETER
MACHINE SKETCH			

Vibration Limits for this equipment – Velocity in mm/sec (rms)			
POSITION	NORMAL	ALERT	ALARM
MOTOR / AGLOMETER	4.5	4.5 to 11.2	Above 11.2

EQUIPMENT SPECIFICATIONS				
DESCRIPTION	DRIVE	DRIVEN	MOUNTING	Y/N
Rated Speed	1470 RPM	2573 RPM	At Ground	Y
Power Rating	37 KW	NA	On Rigid Concrete	N
Bearing No. (DE/NDE)	6313 6312	NUP2211C3 NU 2212C3	Above Ground Level	N
			On Vibro Pad	Y
Pulley Dia	280	160	On Steel Structure	Y

HIGHEST AMPLITUDES & HEALTH CONDITION			
LOCATION	VELOCITY (mm/sec) in rms		HEALTH CONDITION
	Previous (23.01.2017)	Present (22.03.2017)	
MOTOR	3.4	2.3	NORMAL
AGLOMETER	2.7	2.9	NORMAL

OBSERVATIONS:

This equipment is indicating an "NORMAL" behavior with maximum vibration amplitudes of 2.9 mm/s recorded in the Aglometer bearings.

ANALYSIS:

- The health condition of the equipment is NORMAL as per ISO Standards.

ACTION PLAN:

1. Its is suggested to keep close monitoring over change in any parameter during routine physical observations.

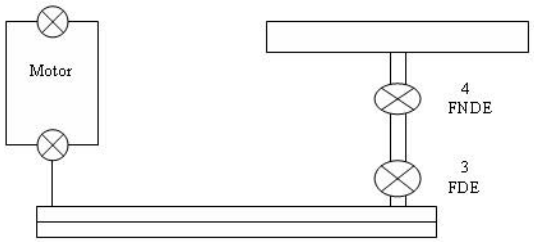
Last Measurement Report

Source: DE AGGLOMETER

4/7/2017 12:33:55 PM

Last Measurement

POINT name	Date/Time	Last value	Units
Motor NDE 1HL	3/22/2017 11:11:58 AM	1.343	mm/s
Motor NDE 1H	3/22/2017 11:12:01 AM	1.450	mm/s
Motor NDE HA	3/22/2017 11:12:04 AM	0.206	g
Motor NDE 1HgE3	3/22/2017 11:12:07 AM	0.607	gE
Motor NDE 1V	3/22/2017 11:12:17 AM	2.044	mm/s
Motor NDE 1A	3/22/2017 11:12:42 AM	2.381	mm/s
Motor DE 2HL	3/22/2017 11:12:53 AM	1.373	mm/s
Motor DE 2H	3/22/2017 11:12:57 AM	1.451	mm/s
Motor DE HA	3/22/2017 11:13:00 AM	0.120	g
Motor DE 2HgE3	3/22/2017 11:13:03 AM	0.450	gE
Motor DE 2V	3/22/2017 11:13:14 AM	2.212	mm/s
Motor DE 2A	3/22/2017 11:13:26 AM	2.190	mm/s
Agglo DE 3HL	3/22/2017 11:13:40 AM	2.990	mm/s
AggloDE 3H	3/22/2017 11:13:44 AM	2.838	mm/s
Agglo DE HA	3/22/2017 11:13:47 AM	0.376	g
Agglo DE 3HgE3	3/22/2017 11:13:50 AM	5.220	gE
Agglo DE 3V	3/22/2017 11:14:00 AM	2.976	mm/s
Agglo DE 3A	3/22/2017 11:14:12 AM	2.315	mm/s
Agglo NDE 4HL	3/22/2017 11:14:23 AM	1.960	mm/s
Agglo NDE 4H	3/22/2017 11:14:26 AM	1.790	mm/s
Agglo NDE HA	3/22/2017 11:14:29 AM	0.140	g
Agglo NDE 4HgE3	3/22/2017 11:14:32 AM	1.432	gE
Agglo NDE 4V	3/22/2017 11:14:44 AM	2.069	mm/s
Agglo NDE 4A	3/22/2017 11:14:53 AM	2.279	mm/s

Vibration Analysis Report 22.03.2017		SKF RELIABILITY SYSTEMS	
EQUIPMENT S/NO.	15	EQUIPMENT NAME	BLENDER – HOUSING SIDE
MACHINE SKETCH			

Vibration Limits for this equipment – Velocity in mm/sec (rms)			
POSITION	NORMAL	ALERT	ALARM
MOTOR / BLENDER	7.1	7.1 to 18.0	Above 18.0

EQUIPMENT SPECIFICATIONS				
DESCRIPTION	DRIVE	DRIVEN	MOUNTING	Y/N
Rated Speed	2920 RPM	2336 RPM	At Ground	N
Power Rating	55 KW	NA	On Rigid Concrete	N
Bearing No. (DE/NDE)	NU 215 EC3 6215 C3	NU-312ECP 6312 ZZC3	Above Ground Level	Y
			On Vibro Pad	Y
Pulley Dia	200	250	On Steel Structure	Y

HIGHEST AMPLITUDES & HEALTH CONDITION			
LOCATION	VELOCITY (mm/sec) in rms		HEALTH CONDITION
	Previous (23.01.2017)	Present (22.02.2017)	
MOTOR	4.2	5.3	NORMAL
BLENDER	3.0	3.8	NORMAL

OBSERVATIONS:

This equipment is indicating an "NORMAL" behavior with maximum vibration amplitudes of 5.3 mm/s recorded in the Motor bearings.

ANALYSIS:

- Minor symptoms of belt pulley misalignment with motor base structural looseness have been indicated in FFT spectra.

ACTION PLAN:

1. Verify belt pulley alignment and belt tension for any abnormality.
2. Also check motor base foundation bolts & rubber dampers for proper functioning.

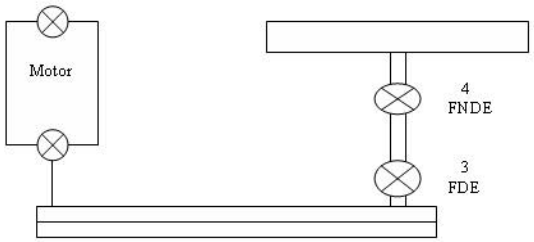
Last Measurement Report

Source: BLENDER HOUSING SIDE

4/7/2017 12:34:28 PM

Last Measurement

POINT name	Date/Time	Last value	Units
Motor NDE 1H	3/22/2017 11:18:57 AM	2.907	mm/s
Motor NDE 1HL	3/22/2017 11:19:01 AM	3.279	mm/s
Motor NDE HA	3/22/2017 11:19:04 AM	0.259	g
Motor NDE 1HgE3	3/22/2017 11:19:07 AM	3.584	gE
Motor NDE 1V	3/22/2017 11:19:54 AM	5.057	mm/s
Motor NDE 1A	3/22/2017 11:20:04 AM	4.214	mm/s
Motor DE 2HL	3/22/2017 11:20:15 AM	2.882	mm/s
Motor DE 2H	3/22/2017 11:20:19 AM	2.644	mm/s
Motor DE HA	3/22/2017 11:20:22 AM	0.382	g
Motor DE 2HgE3	3/22/2017 11:20:25 AM	2.759	gE
Motor DE 2V	3/22/2017 11:20:35 AM	3.315	mm/s
Motor DE 2A	3/22/2017 11:20:46 AM	5.385	mm/s
Blender DE 3HL	3/22/2017 11:21:09 AM	3.557	mm/s
Blender DE 3H	3/22/2017 11:21:13 AM	3.662	mm/s
Blender DE HA	3/22/2017 11:21:16 AM	0.161	g
Blender DE HEA	3/22/2017 11:21:19 AM	1.828	gE
Blender DE 3V	3/22/2017 11:22:03 AM	2.206	mm/s
Blender DE 3A	3/22/2017 11:22:45 AM	2.660	mm/s
Blender NDE 4HL	3/22/2017 11:21:39 AM	3.650	mm/s
Blender NDE 4H	3/22/2017 11:21:43 AM	3.860	mm/s
Blender NDE HA	3/22/2017 11:21:46 AM	0.166	g
Blender NDE HEA	3/22/2017 11:21:49 AM	2.483	gE
Blender NDE 4V	3/22/2017 11:22:15 AM	2.206	mm/s
Blender NDE 4A	3/22/2017 11:22:27 AM	2.989	mm/s

Vibration Analysis Report 22.03.2017		SKF RELIABILITY SYSTEMS	
EQUIPMENT S/NO.	16	EQUIPMENT NAME	BLENDER – DOOR SIDE
MACHINE SKETCH			

Vibration Limits for this equipment – Velocity in mm/sec (rms)			
POSITION	NORMAL	ALERT	ALARM
MOTOR / BLENDER	7.1	7.1 to 18.0	Above 18.0

EQUIPMENT SPECIFICATIONS				
DESCRIPTION	DRIVE	DRIVEN	MOUNTING	Y/N
Rated Speed	2920 RPM	2265 RPM	At Ground	N
Power Rating	55 KW	NA	On Rigid Concrete	N
Bearing No. (DE/NDE)	NU 215 EC3 6215 C3	NU 312 6312	Above Ground Level	Y
			On Vibro Pad	Y
Pulley Dia	180	236	On Steel Structure	Y

HIGHEST AMPLITUDES & HEALTH CONDITION			
LOCATION	VELOCITY (mm/sec) in rms		HEALTH CONDITION
	Previous (23.01.2017)	Present (22.03.2017)	
MOTOR	8.6	6.5	NORMAL
BLENDER	4.0	3.7	NORMAL

OBSERVATIONS:

This equipment is indicating an "NORMAL" behavior with maximum vibration amplitudes of 6.5 mm/s recorded in the Motor bearings.

ANALYSIS:

- Symptoms of belt pulley misalignment have been indicated in FFT spectra.

ACTION PLAN:

1. Verify belt pulley alignment and belt tension for proper functioning.
2. If possible additional stiffening can be provided to motor foundation to reduce vibrations further.

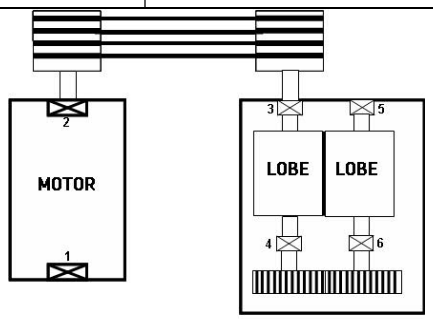
Last Measurement Report

Source: BLENDER DOORSIDE

4/7/2017 12:35:00 PM

Last Measurement

POINT name	Date/Time	Last value	Units
Motor NDE 1H	3/22/2017 11:15:20 AM	3.744	mm/s
Motor NDE 1HL	3/22/2017 11:15:23 AM	3.815	mm/s
Motor NDE HA	3/22/2017 11:15:27 AM	0.573	g
Motor NDE 1HgE3	3/22/2017 11:15:30 AM	2.196	gE
Motor NDE 1V	3/22/2017 11:15:42 AM	6.501	mm/s
Motor NDE 1A	3/22/2017 11:15:46 AM	5.948	mm/s
Motor DE 2HL	3/22/2017 11:16:05 AM	3.881	mm/s
Motor DE 2H	3/22/2017 11:16:09 AM	3.832	mm/s
Motor DE HA	3/22/2017 11:16:12 AM	0.196	g
Motor DE 2HgE3	3/22/2017 11:16:15 AM	1.998	gE
Motor DE 2V	3/22/2017 11:16:28 AM	6.662	mm/s
Motor DE 2A	3/22/2017 11:16:40 AM	3.677	mm/s
Blender DE 3HL-V	3/22/2017 11:16:53 AM	2.274	mm/s
Blender DE 3HV	3/22/2017 11:16:57 AM	2.144	mm/s
Blender DE HA	3/22/2017 11:17:00 AM	0.181	g
Blender DE HEA	3/22/2017 11:17:03 AM	4.947	gE
Blender DE 3VV	3/22/2017 11:17:51 AM	3.713	mm/s
Blender DE 3AV	3/22/2017 11:18:02 AM	3.404	mm/s
Blender NDE 4HL	3/22/2017 11:17:20 AM	2.279	mm/s
Blender NDE 4H	3/22/2017 11:17:23 AM	2.302	mm/s
Blender NDE 4HA	3/22/2017 11:17:26 AM	0.186	g
Blender NDE 4HEA	3/22/2017 11:17:29 AM	4.090	gE
Blender NDE 4VV	3/22/2017 11:17:40 AM	3.786	mm/s
Blender NDE 4AV	3/22/2017 11:18:16 AM	3.430	mm/s

Vibration Analysis Report 22.03.2017		SKF RELIABILITY SYSTEMS	
EQUIPMENT S/NO.	17	EQUIPMENT NAME	BLENDER AERATION BLOWER
MACHINE SKETCH		 ROTARY LOBE BLOWER	

Vibration Limits for this equipment – Velocity in mm/sec (rms)			
POSITION	NORMAL	ALERT	ALARM
MOTOR / BLOWER	7.1	7.1 to 18.0	Above 18.0

EQUIPMENT SPECIFICATIONS				
DESCRIPTION	DRIVE	DRIVEN	MOUNTING	Y/N
Rated Speed	1450 RPM	725 RPM	At Ground	N
Power Rating	11 KW	NA	On Rigid Concrete	N
Bearing No. (DE/NDE)	6309 ZZ 6209ZZ	6205 ZZ 6205 ZZ	Above Ground Level	Y
			On Vibro Pad	N
Pulley Dia	125	250	On Steel Structure	Y

HIGHEST AMPLITUDES & HEALTH CONDITION			
LOCATION	VELOCITY (mm/sec) in rms		HEALTH CONDITION
	Previous (23.01.2017)	Present (22.03.2017)	
MOTOR	2.1	2.3	NORMAL
BLOWER	3.9	3.9	NORMAL

OBSERVATIONS:

This equipment is indicating an "NORMAL" behavior with maximum vibration amplitudes of 3.9 mm/s recorded in the Blower bearings.

ANALYSIS:

- The health condition of the equipment is NORMAL as per ISO Standards but in increasing trend from past few measurements. Symptoms of improper lobe meshing are being observed.

ACTION PLAN:

1. It is suggested to inspect the blower internals for any abnormality on next available opportunity. Specially to ensure the proper root clearances & adequate air gap. Also check the suction filter for any abnormality.

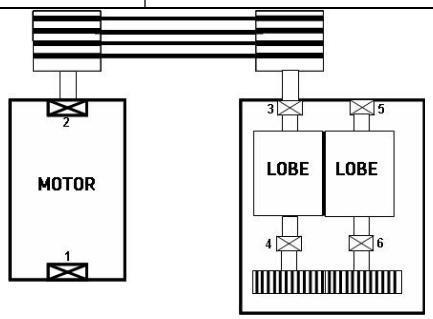
Last Measurement Report

Source: Blender Aeration Blr

4/7/2017 12:35:33 PM

Last Measurement

POINT name	Date/Time	Last value	Units
Motor NDE 1H	3/22/2017 10:46:09 AM	1.832	mm/s
Motor NDE HA	3/22/2017 10:46:12 AM	0.341	g
Motor NDE 1HgE3	3/22/2017 10:46:16 AM	1.883	gE
Motor NDE 1V	3/22/2017 10:46:26 AM	1.179	mm/s
Motor NDE 1A	3/22/2017 10:46:37 AM	2.392	mm/s
Motor DE 2H	3/22/2017 10:46:48 AM	1.065	mm/s
Motor DE HA	3/22/2017 10:46:51 AM	0.177	g
Motor DE 2HgE3	3/22/2017 10:46:54 AM	2.506	gE
Motor DE 2V	3/22/2017 10:47:05 AM	1.590	mm/s
Motor DE 2A	3/22/2017 10:47:23 AM	2.361	mm/s
Fan DE 3H	3/22/2017 10:47:34 AM	2.230	mm/s
Fan DE 3HA	3/22/2017 10:47:37 AM	0.503	g
Fan DE 3HgE3	3/22/2017 10:47:40 AM	2.532	gE
Fan DE 3V	3/22/2017 10:47:55 AM	1.905	mm/s
Fan DE 3A	3/22/2017 10:48:05 AM	2.938	mm/s
Fan NDE 4H	3/22/2017 10:48:15 AM	1.484	mm/s
Fan NDE 4HA	3/22/2017 10:48:18 AM	0.240	g
Fan NDE 4HgE3	3/22/2017 10:48:23 AM	1.558	gE
Fan NDE 4V	3/22/2017 10:48:33 AM	1.626	mm/s
Fan NDE 4A	3/22/2017 10:48:57 AM	3.130	mm/s
Fan DE 5H	3/22/2017 10:49:07 AM	1.340	mm/s
Fan DE 5HA	3/22/2017 10:49:10 AM	0.204	g
Fan DE 5HgE3	3/22/2017 10:49:13 AM	1.388	gE
Fan DE 5V	3/22/2017 10:49:24 AM	1.421	mm/s
Fan DE 5A	3/22/2017 10:49:46 AM	3.937	mm/s
Fan NDE 6HV	3/22/2017 10:50:00 AM	2.138	mm/s
Fan NDE 6HA	3/22/2017 10:50:03 AM	0.462	g
Fan NDE 6HgE3	3/22/2017 10:50:06 AM	1.761	gE
Fan NDE 6VV	3/22/2017 10:50:19 AM	2.163	mm/s
Fan NDE 6AV	3/22/2017 10:50:29 AM	3.951	mm/s

Vibration Analysis Report 22.03.2017		SKF RELIABILITY SYSTEMS	
EQUIPMENT S/NO.	18	EQUIPMENT NAME	PRODUCT SILO AREATION BLOWER
MACHINE SKETCH		 ROTARY LOBE BLOWER	

Vibration Limits for this equipment – Velocity in mm/sec (rms)			
POSITION	NORMAL	ALERT	ALARM
MOTOR / BLOWER	7.1	7.1 to 18.0	Above 18.0

EQUIPMENT SPECIFICATIONS				
DESCRIPTION	DRIVE	DRIVEN	MOUNTING	Y/N
Rated Speed	1470 RPM	1317 RPM	At Ground	N
Power Rating	22 KW	NA	On Rigid Concrete	N
Bearing No. (DE/NDE)	6310 ZZ 6310ZZ	NA	Above Ground Level	Y
			On Vibro Pad	N
Pulley Dia	224	250	On Steel Structure	Y

HIGHEST AMPLITUDES & HEALTH CONDITION			
LOCATION	VELOCITY (mm/sec) in rms		HEALTH CONDITION
	Previous (23.01.2017)	Present (22.03.2017)	
MOTOR	6.9	5.9	NORMAL
BLOWER	5.7	6.0	NORMAL

OBSERVATIONS:

This equipment is indicating an "NORMAL" behavior with maximum vibration amplitudes of 6.0 mm/s recorded in the Blower bearings.

ANALYSIS:

- The health condition of the equipment is slightly above ALERT as per ISO standards due to temporary operational changes possibly.

ACTION PLAN:

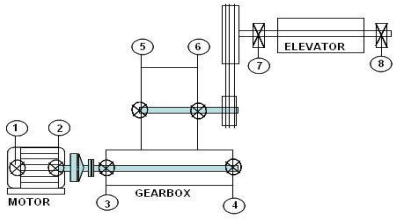
1. Its is suggested to keep close monitoring over change in any parameter during routine physical observations.

Last Measurement Report

Source: prodt siloareatioblo

4/7/2017 12:36:36 PM

	Last Measurement		
POINT name	**Date/Time**	**Last value**	**Units**
Motor NDE 1H	3/22/2017 10:56:34 AM	5.926	mm/s
Motor NDE HA	3/22/2017 10:56:37 AM	0.501	g
Motor NDE 1HgE3	3/22/2017 10:56:40 AM	2.507	gE
Motor NDE 1V	3/22/2017 10:56:50 AM	2.333	mm/s
Motor NDE 1A	3/22/2017 10:56:59 AM	2.341	mm/s
Motor DE 2H	3/22/2017 10:57:18 AM	5.453	mm/s
Motor DE HA	3/22/2017 10:57:21 AM	0.775	g
MOTOR DE HEA 1	3/22/2017 10:57:24 AM	3.050	gE
Motor DE 2HgE3	3/22/2017 10:57:27 AM	3.101	gE
Motor DE 2V	3/22/2017 10:57:38 AM	2.166	mm/s
Motor DE 2A	3/22/2017 10:57:48 AM	3.546	mm/s
BLOWER DE 3HV	3/22/2017 10:57:57 AM	5.713	mm/s
BLOWER DE 3HA	3/22/2017 10:58:00 AM	0.921	g
BLOWER DE 3HEA 2	3/22/2017 10:58:03 AM	3.368	gE
BLOWER DE 3VV	3/22/2017 10:58:16 AM	4.655	mm/s
BLOWER DE 3AV	3/22/2017 10:58:26 AM	6.032	mm/s
BLOWER NDE4HV	3/22/2017 10:58:38 AM	5.277	mm/s
BLOWER NDE4HA	3/22/2017 10:58:41 AM	0.694	g
BLOWER NDE4VV	3/22/2017 10:58:52 AM	3.399	mm/s
BLOWER NDE4AV	3/22/2017 10:59:01 AM	3.914	mm/s
BLOWER DE 5HV-H	3/22/2017 10:59:26 AM	4.929	mm/s
BLOWER DE 5HV.L	3/22/2017 10:59:31 AM	5.113	mm/s
BLOWER DE 5HA	3/22/2017 10:59:34 AM	1.067	g
BLOWER DE 5HEA 2	3/22/2017 10:59:37 AM	4.846	gE
BLOWER DE 5VV	3/22/2017 10:59:46 AM	4.696	mm/s
BLOWER DE 5AV	3/22/2017 10:59:54 AM	4.125	mm/s
BLOWER NDE 6HV	3/22/2017 11:00:05 AM	5.102	mm/s
BLOWER NDE 6HV.L	3/22/2017 11:00:10 AM	5.213	mm/s
BLOWER NDE 6HA	3/22/2017 11:00:13 AM	1.221	g
BLOWER NDE 6HEA2	3/22/2017 11:00:16 AM	3.036	gE
BLOWER NDE 6VV	3/22/2017 11:00:26 AM	3.769	mm/s
BLOWER NDE 6AV	3/22/2017 11:00:36 AM	3.019	mm/s

Vibration Analysis Report 22.03.2017		SKF RELIABILITY SYSTEMS	
EQUIPMENT S/NO.	19	EQUIPMENT NAME	BALL MILL DISCHARGE BUCKET ELEVATOR
MACHINE SKETCH			

Vibration Limits for this equipment – Velocity in mm/sec (rms)			
POSITION	NORMAL	ALERT	ALARM
MOTOR/GEARBOX/ELEVATOR	4.5	4.5 to 11.2	Above 11.2

EQUIPMENT SPECIFICATIONS				
DESCRIPTION	DRIVE	DRIVEN	MOUNTING	Y/N
Rated Speed	1460	GB I/P-1460 GB O/P-48.6 Pulley shaft-33	At Ground	N
Power Rating	15 KW	NA	On Rigid Concrete	N
Bearing No. (DE/NDE)	6309 ZZ 6209ZZ	Pos 3-32213 Pos 4-32213 Pos 5-32216 Pos 6-32216 Pos 7-22222 EK Pos 8-22222 EK	Above Ground Level	Y
			On Vibro Pad	N
Pulley Dia	GB Sprocket 17 teeth	BE Drum Sprocket 26 teeth	On Steel Structure	Y

HIGHEST AMPLITUDES & HEALTH CONDITION			
LOCATION	VELOCITY (mm/sec) in rms		HEALTH CONDITION
	Previous (23.01.2017)	Present (22.03.2017)	
MOTOR	3.8	3.1	NORMAL
GEARBOX	4.9	3.9	NORMAL
ELEVATOR	2.9	2.1	NORMAL

OBSERVATIONS:

This equipment is indicating an "NORMAL" behavior with maximum vibration amplitudes of 3.9 mm/s recorded at the Gearbox side.

ANALYSIS:

- Slight decrement in vibrations observed after spider replacement but indications of minor misalignment induced vibrations are there.

ACTION PLAN:

1. It is suggested to review machine train alignment within permissible limits and reassess the alignment if required. Also check motor base bolts for slight looseness / soft foot & rectify the same if needed.

Last Measurement Report

Source: DIS.BUC.ELEVATOR

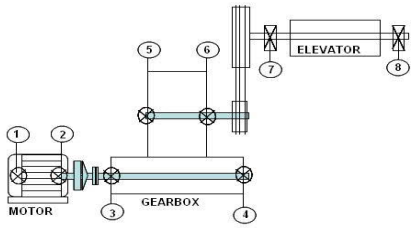
4/7/2017 12:37:17 PM

Last Measurement

POINT name	Date/Time	Last value	Units
MOTOR NDE HV	3/22/2017 10:04:49 AM	1.538	mm/s
MOTOR NDE HA	3/22/2017 10:04:52 AM	0.161	g
MOTOR NDE HEA 1	3/22/2017 10:04:55 AM	0.691	gE
MOTOR NDE HEA 2	3/22/2017 10:04:58 AM	1.287	gE
MOTOR NDE VV	3/22/2017 10:05:20 AM	2.683	mm/s
MOTOR NDE AV	3/22/2017 10:05:34 AM	2.820	mm/s
MOTOR DE HV	3/22/2017 10:05:43 AM	1.940	mm/s
MOTOR DE HA	3/22/2017 10:05:46 AM	0.106	g
MOTOR DE HEA 1	3/22/2017 10:05:49 AM	0.457	gE
MOTOR DE HEA 2	3/22/2017 10:05:52 AM	1.109	gE
MOTOR DE VV	3/22/2017 10:06:05 AM	2.789	mm/s
MOTOR DE AV	3/22/2017 10:06:16 AM	3.175	mm/s
GB I/P DE HV.L	3/22/2017 10:06:29 AM	1.581	mm/s
GB I/P DE HV-H	3/22/2017 10:06:32 AM	1.903	mm/s
GB I/P DE HA	3/22/2017 10:06:35 AM	0.102	g
GB I/P DE HEA 1	3/22/2017 10:06:38 AM	0.392	gE
GB I/P DE HEA 2	3/22/2017 10:06:41 AM	1.810	gE
GB I/P DE VV	3/22/2017 10:06:56 AM	1.418	mm/s
GB I/P DE AV	3/22/2017 10:07:05 AM	2.835	mm/s
GB O/P DE - HV-L	3/22/2017 10:07:52 AM	3.458	mm/s
GB O/P DE - HV.H	3/22/2017 10:07:56 AM	3.927	mm/s
GB O/P DE HA	3/22/2017 10:08:01 AM	0.082	g
GB O/P DE HEA 1	3/22/2017 10:08:13 AM	0.352	gE
GB O/P DE HEA 2	3/22/2017 10:08:25 AM	1.254	gE
GB O/P DE VV	3/22/2017 10:08:43 AM	1.773	mm/s
GB O/P DE - AV	3/22/2017 10:08:56 AM	2.384	mm/s
GB O/P NDE HV-L	3/22/2017 10:09:17 AM	3.972	mm/s
GB O/P NDE HV.H	3/22/2017 10:09:22 AM	3.297	mm/s
GB O/P NDE HA	3/22/2017 10:09:27 AM	0.072	g
GB O/P NDE HEA1	3/22/2017 10:09:39 AM	0.299	gE
GB O/P NDE HEA2	3/22/2017 10:09:51 AM	1.556	gE

Last Measurement

POINT name	Date/Time	Last value	Units
GB O/P NDE VV	3/22/2017 10:10:09 AM	1.567	mm/s
GB O/P NDE AV	3/22/2017 10:10:22 AM	2.244	mm/s
PINION DE HV	3/22/2017 10:10:43 AM	2.309	mm/s
PINION DE HV.H	3/22/2017 10:10:50 AM	2.313	mm/s
PINION DE HEA1	3/22/2017 10:11:02 AM	0.245	gE
PINION DE HEA2	3/22/2017 10:11:13 AM	0.270	gE
PINION DE VV	3/22/2017 10:11:31 AM	1.238	mm/s
PINION DE AV	3/22/2017 10:11:47 AM	1.350	mm/s
PINION NDE HV	3/22/2017 10:12:09 AM	2.438	mm/s
PINION NDE HV.H	3/22/2017 10:12:16 AM	2.160	mm/s
PINION NDE HEA1	3/22/2017 10:12:28 AM	0.099	gE
PINION NDE HEA2	3/22/2017 10:12:39 AM	0.072	gE
PINION NDE VV	3/22/2017 10:12:55 AM	0.981	mm/s
PINION NDE AV	3/22/2017 10:13:10 AM	1.257	mm/s

Vibration Analysis Report 22.03.2017		SKF RELIABILITY SYSTEMS	
EQUIPMENT S/NO.	20	EQUIPMENT NAME	SILO FEED BUCKET ELEVATOR
MACHINE SKETCH			

Vibration Limits for this equipment – Velocity in mm/sec (rms)			
POSITION	NORMAL	ALERT	ALARM
MOTOR/GEARBOX/ELEVATOR	4.5	4.5 to 11.2	Above 11.2

EQUIPMENT SPECIFICATIONS

DESCRIPTION	DRIVE	DRIVEN	MOUNTING	Y/N
Rated Speed	1470	GB I/P-1470 GB O/P-73.5 Pulley shaft-33	At Ground	N
Power Rating	30 KW	NA	On Rigid Concrete	N
Bearing No. (DE/NDE)	6312 ZZ 6310ZZ	Pos 3-32216 Pos 4-32216 Pos 5-33019 Pos 6-33019 Pos 7-22222 EK Pos 8-22222 EK	Above Ground Level	Y
			On Vibro Pad	N
Pulley Dia	GB Sprocket 15 teeth	BE Drum Sprocket 33 teeth	On Steel Structure	Y

HIGHEST AMPLITUDES & HEALTH CONDITION

LOCATION	VELOCITY (mm/sec) in rms		HEALTH CONDITION
	Previous (23.01.2017)	Present (22.03.2017)	
MOTOR	3.6	6.0	ALERT
GEARBOX	3.8	4.6	ALERT
ELEVATOR	3.6	4.3	NORMAL

OBSERVATIONS:

This equipment is indicating an "ALERT" behavior with maximum vibration amplitudes of 6.0 mm/s recorded in the Gearbox bearings.

ANALYSIS:

- Vibrations increased considerably to ALERT range as per the previous trend with symptoms of minor structural looseness and misalignment in the system.

ACTION PLAN:

1. It is suggested to check motor base bolts for soft foot & review machine train alignment.
2. Also check motor base bolts for equally balanced tightening on earliest available opportunity.

Last Measurement Report

Source: FEED SILO ELEVATOR

4/7/2017 12:37:56 PM

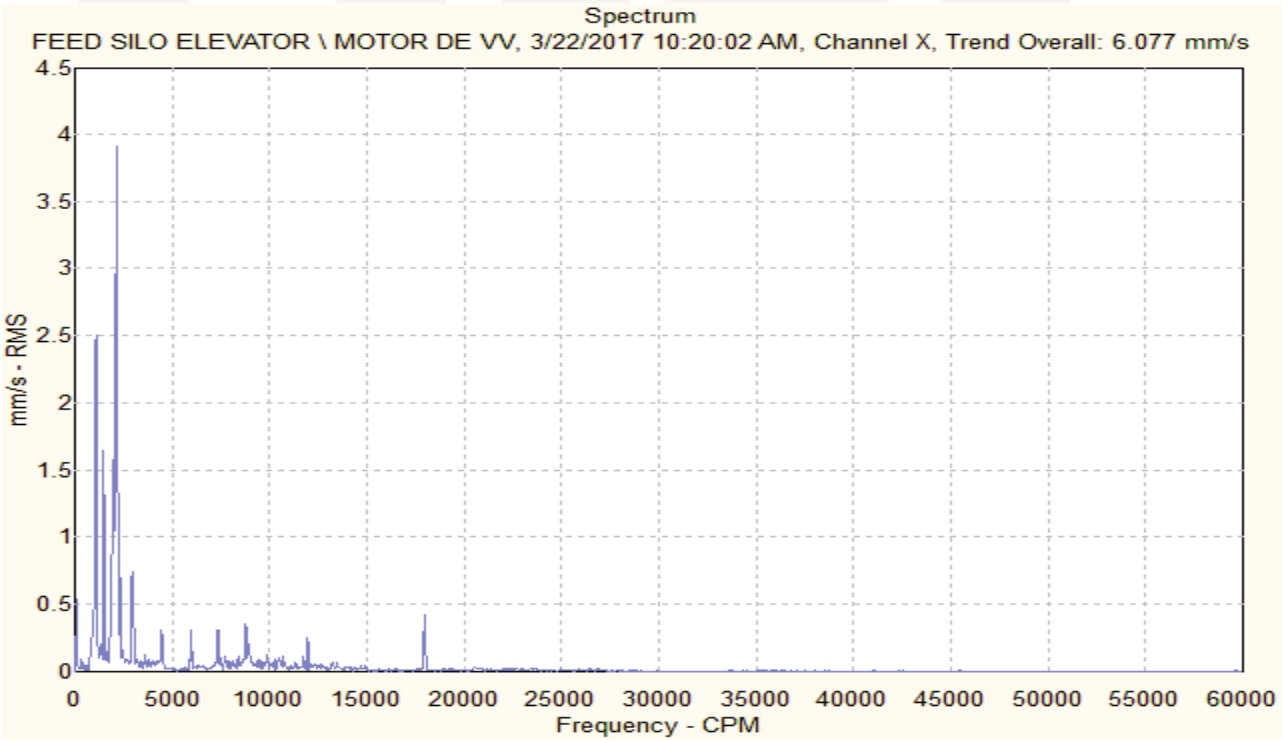
Last Measurement

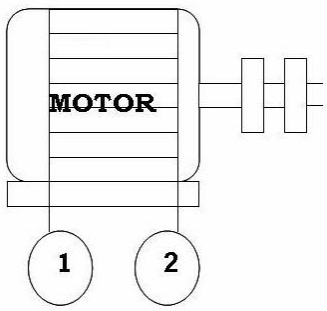
POINT name	Date/Time	Last value	Units
MOTOR NDE HV	3/22/2017 10:19:03 AM	3.292	mm/s
MOTOR NDE HA	3/22/2017 10:19:06 AM	0.124	g
MOTOR NDE HEA 1	3/22/2017 10:19:10 AM	0.617	gE
MOTOR NDE HEA 2	3/22/2017 10:19:13 AM	0.670	gE
MOTOR NDE VV	3/22/2017 10:19:24 AM	4.025	mm/s
MOTOR NDE AV	3/22/2017 10:19:34 AM	3.060	mm/s
MOTOR DE HV	3/22/2017 10:19:42 AM	3.594	mm/s
MOTOR DE HA	3/22/2017 10:19:45 AM	0.180	g
MOTOR DE HEA 1	3/22/2017 10:19:48 AM	1.024	gE
MOTOR DE HEA 2	3/22/2017 10:19:51 AM	1.431	gE
MOTOR DE VV	3/22/2017 10:20:02 AM	6.077	mm/s
MOTOR DE AV	3/22/2017 10:20:14 AM	2.205	mm/s
GB I/P DE HV-H	3/22/2017 10:20:29 AM	1.580	mm/s
GB I/P DE HV.L	3/22/2017 10:20:35 AM	1.708	mm/s
GB I/P DE HA	3/22/2017 10:20:38 AM	0.159	g
GB I/P DE HEA 1	3/22/2017 10:20:41 AM	1.009	gE
GB I/P DE HEA 2	3/22/2017 10:20:45 AM	0.835	gE
GB I/P DE VV	3/22/2017 10:20:57 AM	3.837	mm/s
GB I/P DE AV	3/22/2017 10:21:08 AM	3.587	mm/s
GB O/P DE - HV-L	3/22/2017 10:21:39 AM	2.637	mm/s
GB O/P DE - HV.H	3/22/2017 10:21:44 AM	2.771	mm/s
GB O/P DE HA	3/22/2017 10:21:49 AM	0.142	g
GB O/P DE HEA 1	3/22/2017 10:22:01 AM	0.428	gE
GB O/P DE HEA 2	3/22/2017 10:22:13 AM	0.555	gE
GB O/P DE VV	3/22/2017 10:22:48 AM	4.619	mm/s
GB O/P DE - AV	3/22/2017 10:23:05 AM	2.296	mm/s
GB O/P NDE HV-L	3/22/2017 10:23:23 AM	3.506	mm/s
GB O/P NDE HV.H	3/22/2017 10:23:28 AM	3.267	mm/s
GB O/P NDE HA	3/22/2017 10:23:33 AM	0.110	g
GB O/P NDE HEA1	3/22/2017 10:23:45 AM	0.551	gE
GB O/P NDE HEA2	3/22/2017 10:23:57 AM	0.361	gE

Last Measurement

POINT name	Date/Time	Last value	Units
GB O/P NDE VV	3/22/2017 10:24:15 AM	3.474	mm/s
GB O/P NDE AV	3/22/2017 10:24:27 AM	3.702	mm/s
PINION DE HV	3/22/2017 10:24:48 AM	3.776	mm/s
PINION DE HV.H	3/22/2017 10:24:55 AM	4.344	mm/s
PINION DE HEA1	3/22/2017 10:25:06 AM	0.623	gE
PINION DE HEA2	3/22/2017 10:25:18 AM	0.286	gE
PINION DE VV	3/22/2017 10:25:34 AM	2.453	mm/s
PINION DE AV	3/22/2017 10:25:50 AM	3.384	mm/s
PINION NDE HV	3/22/2017 10:26:24 AM	2.658	mm/s
PINION NDE HV.H	3/22/2017 10:26:31 AM	2.760	mm/s
PINION NDE HEA1	3/22/2017 10:26:43 AM	0.257	gE
PINION NDE HEA2	3/22/2017 10:26:54 AM	0.113	gE
PINION NDE VV	3/22/2017 10:27:27 AM	3.504	mm/s
PINION NDE AV	3/22/2017 10:27:41 AM	2.737	mm/s

FEED SILO ELEVATOR \ MOTOR DE VV



Vibration Analysis Report 22.03.2017		SKF RELIABILITY SYSTEMS	
EQUIPMENT S/NO.	21	EQUIPMENT NAME	CLASSIFIER AIR SLIDE FAN
MACHINE SKETCH			

Vibration Limits for this equipment – Velocity in mm/sec (rms)			
POSITION	NORMAL	ALERT	ALARM
MOTOR / FAN	4.5	4.5 to 11.2	Above 11.2

EQUIPMENT SPECIFICATIONS				
DESCRIPTION	DRIVE	DRIVEN	MOUNTING	Y/N
Rated Speed	2915 RPM	2915 RPM	At Ground	Y
Power Rating	5.5 KW	NA	On Rigid Concrete	N
Bearing No. (DE/NDE)	NA	NA	Above Ground Level	N
			On Vibro Pad	Y
Pulley Dia	NA	NA	On Steel Structure	Y

HIGHEST AMPLITUDES & HEALTH CONDITION			
LOCATION	VELOCITY (mm/sec) in rms		HEALTH CONDITION
	Previous (23.01.2017)	Present (22.03.2017)	
MOTOR	4.8	5.2	ALERT

OBSERVATIONS:

This equipment is indicating an "ALERT" behavior with maximum vibration amplitudes of 5.2 mm/s recorded in the Motor bearings.

ANALYSIS:

- Vibration level is sustaining the lower trend but still in ALERT range.
- Symptoms of inadequate structural rigidity observed in the system.

ACTION PLAN:

1. Vibropads to be checked for equal balanced tightening at all measurement locations. Improvement in base structure rigidity may decrease the vibration level further, Kept under trend monitoring.

Last Measurement Report

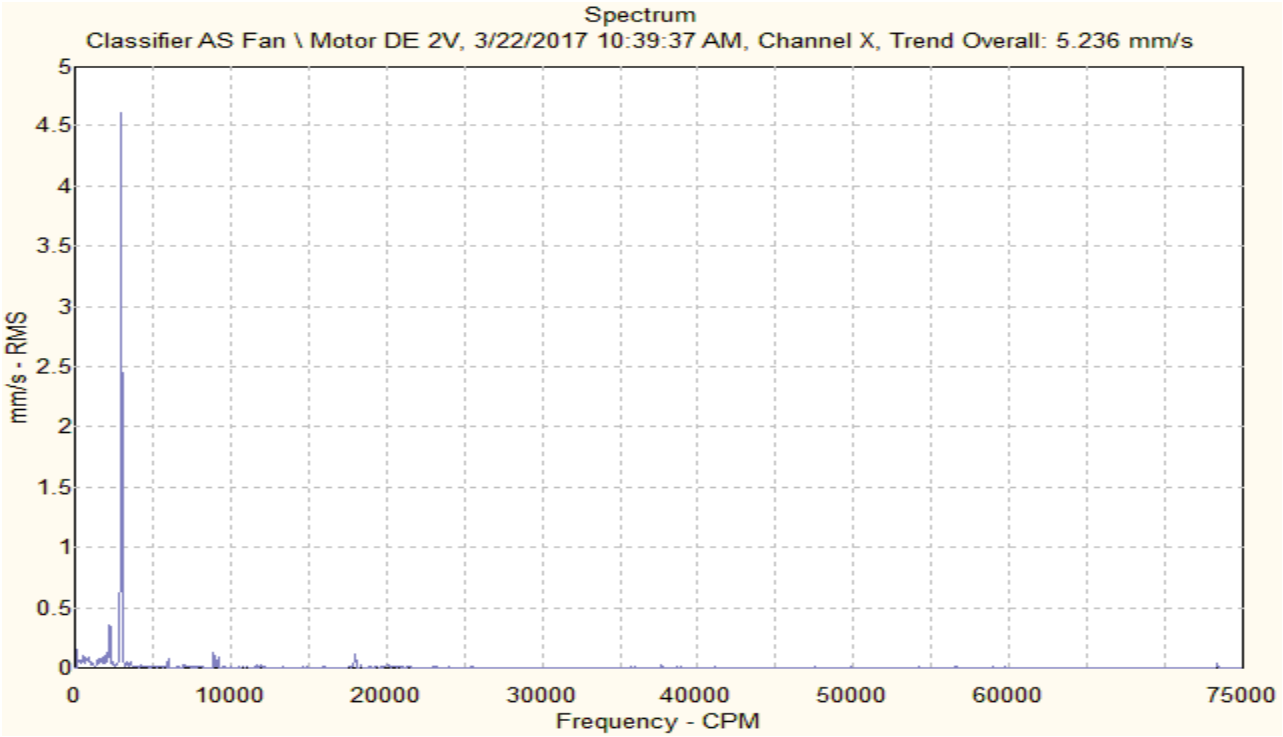
Source: Classifier AS Fan

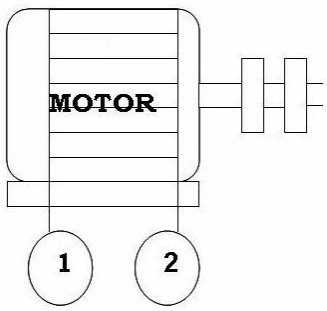
4/7/2017 12:39:41 PM

Last Measurement

POINT name	Date/Time	Last value	Units
Motor NDE 1H	3/22/2017 10:37:43 AM	1.281	mm/s
Motor NDE 1HL	3/22/2017 10:37:50 AM	1.479	mm/s
Motor NDE HA	3/22/2017 10:37:53 AM	0.149	g
Motor NDE 1HgE3	3/22/2017 10:37:57 AM	0.511	gE
Motor NDE 1V	3/22/2017 10:38:33 AM	5.173	mm/s
Motor NDE 1A	3/22/2017 10:38:50 AM	1.515	mm/s
Motor DE 2H	3/22/2017 10:38:59 AM	2.355	mm/s
Motor DE HA	3/22/2017 10:39:02 AM	0.137	g
Motor DE 2HgE3	3/22/2017 10:39:06 AM	0.514	gE
Motor DE 2V	3/22/2017 10:39:37 AM	5.236	mm/s
Motor DE 2A	3/22/2017 10:39:50 AM	1.438	mm/s

Classifier AS Fan \ Motor DE 2V



Vibration Analysis Report 22.03.2017		SKF RELIABILITY SYSTEMS	
EQUIPMENT S/NO.	22	EQUIPMENT NAME	CLASSIFIER SEAL AIR FAN
MACHINE SKETCH			

Vibration Limits for this equipment – Velocity in mm/sec (rms)			
POSITION	NORMAL	ALERT	ALARM
MOTOR / FAN	4.5	4.5 to 11.2	Above 11.2

EQUIPMENT SPECIFICATIONS				
DESCRIPTION	DRIVE	DRIVEN	MOUNTING	Y/N
Rated Speed	2800 RPM	2800 RPM	At Ground	Y
Power Rating	22 KW	NA	On Rigid Concrete	N
Bearing No. (DE/NDE)	6310 2Z C3 6210 2Z C3	NA	Above Ground Level	N
			On Vibro Pad	Y
Pulley Dia	NA	NA	On Steel Structure	Y

HIGHEST AMPLITUDES & HEALTH CONDITION			
LOCATION	VELOCITY (mm/sec) in rms		HEALTH CONDITION
	Previous (23.01.2017)	Present (22.03.2017)	
MOTOR	5.5	5.5	ALERT

OBSERVATIONS:

This equipment is indicating an "ALERT" behavior with maximum vibration amplitudes of 5.5 mm/s recorded in the Motor bearings.

ANALYSIS:

- The health condition of the equipment is just above ALERT as per ISO standards but vibrations trending higher from past few measurements indicating minor structural looseness induced vibrations.

ACTION PLAN:

1. Check foundation bolts for proper tightening and arrest slight looseness at base bolts, if any. Improvement in base structure rigidity may decrease the vibration level further, Kept under trend monitoring.

Last Measurement Report

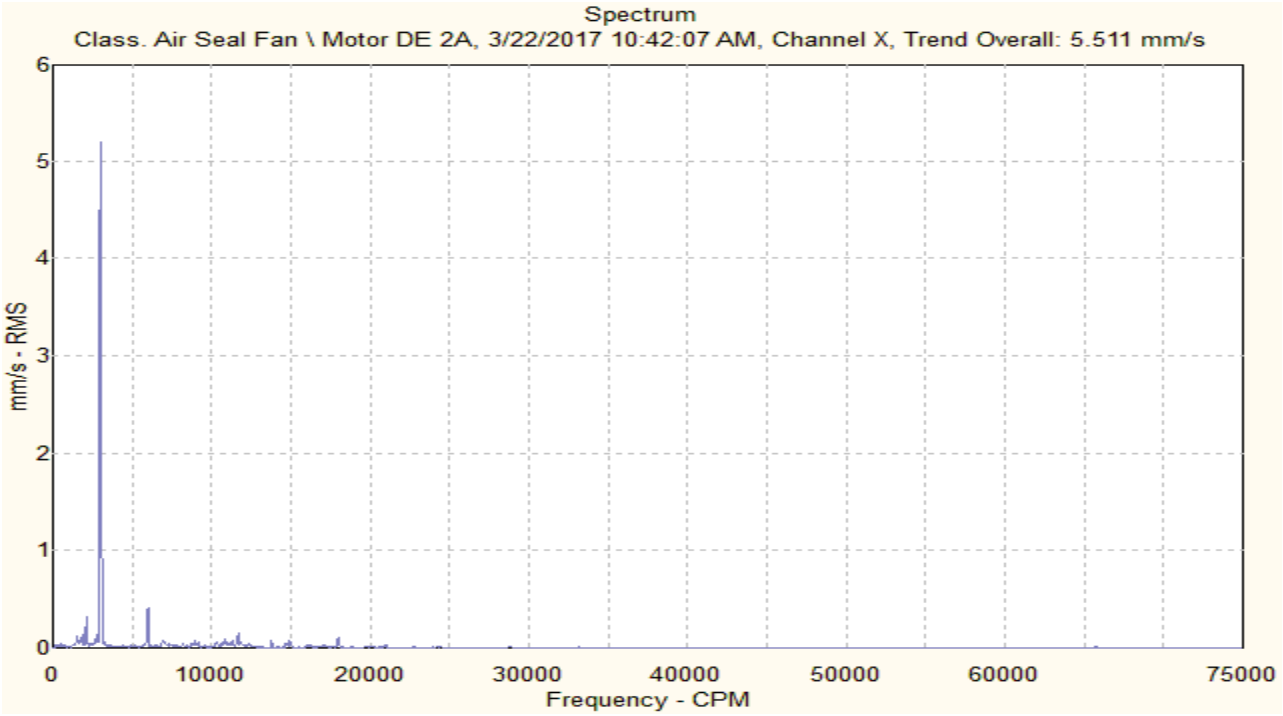
Source: Class. Air Seal Fan

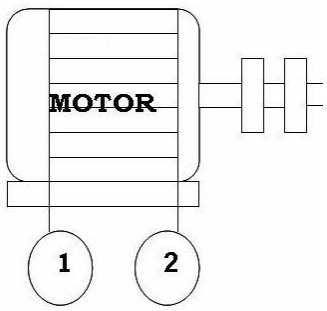
4/7/2017 12:41:36 PM

Last Measurement

POINT name	Date/Time	Last value	Units
Motor NDE 1H	3/22/2017 10:40:44 AM	2.512	mm/s
Motor NDE 1HL	3/22/2017 10:40:52 AM	2.162	mm/s
Motor NDE HA	3/22/2017 10:40:54 AM	0.370	g
Motor NDE 1HgE3	3/22/2017 10:40:58 AM	1.173	gE
Motor NDE 1V	3/22/2017 10:41:12 AM	2.650	mm/s
Motor NDE 1A	3/22/2017 10:41:30 AM	4.263	mm/s
Motor DE 2H	3/22/2017 10:41:38 AM	1.290	mm/s
Motor DE HA	3/22/2017 10:41:41 AM	0.114	g
Motor DE 2HgE3	3/22/2017 10:41:45 AM	1.142	gE
Motor DE 2V	3/22/2017 10:41:58 AM	1.162	mm/s
Motor DE 2A	3/22/2017 10:42:07 AM	5.511	mm/s

Class. Air Seal Fan \ Motor DE 2A



Vibration Analysis Report 22.03.2017		SKF RELIABILITY SYSTEMS	
EQUIPMENT S/NO.	23	EQUIPMENT NAME	SILO NO.1 BINVENT FAN
MACHINE SKETCH			

Vibration Limits for this equipment – Velocity in mm/sec (rms)			
POSITION	NORMAL	ALERT	ALARM
MOTOR / FAN	7.1	7.1 to 18.0	Above 18.0

EQUIPMENT SPECIFICATIONS				
DESCRIPTION	DRIVE	DRIVEN	MOUNTING	Y/N
Rated Speed	1400 RPM	NA	At Ground	Y
Power Rating	5.5 KW	NA	On Rigid Concrete	N
Bearing No. (DE/NDE)	6208 ZZ 6207 ZZ	NA	Above Ground Level	N
			On Vibro Pad	Y
Pulley Dia	NA	NA	On Steel Structure	Y

HIGHEST AMPLITUDES & HEALTH CONDITION			
LOCATION	VELOCITY (mm/sec) in rms		HEALTH CONDITION
	Previous (23.01.2017)	Present (22.03.2017)	
MOTOR	6.0	5.5	NORMAL

OBSERVATIONS:

This equipment is indicating an "NORMAL" behavior with maximum vibration amplitudes of 5.5 mm/s recorded in the Motor bearings.

ANALYSIS:

- The health condition of the equipment is NORMAL as per ISO standards with slight increment in vibration trend.

ACTION PLAN:

1. Ok to run under trend monitoring following routine coating cleaning.

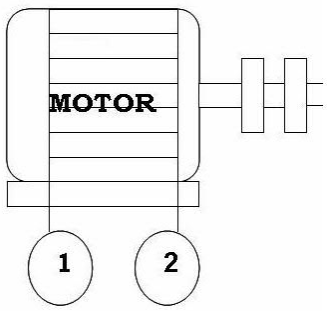
Last Measurement Report

Source: Silo No1 Binvent Fan

4/7/2017 12:42:19 PM

Last Measurement

POINT name	Date/Time	Last value	Units
Motor NDE 1H	3/22/2017 9:48:20 AM	5.502	mm/s
Motor NDE 1HL	3/22/2017 9:48:27 AM	5.520	mm/s
Motor NDE HA	3/22/2017 9:48:30 AM	0.178	g
Motor NDE 1HgE3	3/22/2017 9:48:34 AM	0.760	gE
Motor NDE 1V	3/22/2017 9:48:53 AM	2.103	mm/s
Motor NDE 1A	3/22/2017 9:49:03 AM	4.191	mm/s
Motor DE 2H	3/22/2017 9:49:13 AM	4.252	mm/s
Motor DE HA	3/22/2017 9:49:16 AM	0.250	g
Motor DE 2HgE3	3/22/2017 9:49:20 AM	0.549	gE
Motor DE 2V	3/22/2017 9:49:31 AM	2.490	mm/s
Motor DE 2A	3/22/2017 9:49:42 AM	4.126	mm/s

Vibration Analysis Report 22.03.2017		SKF RELIABILITY SYSTEMS	
EQUIPMENT S/NO.	24	EQUIPMENT NAME	SILO NO.2 BINVENT FAN
MACHINE SKETCH			

Vibration Limits for this equipment – Velocity in mm/sec (rms)			
POSITION	NORMAL	ALERT	ALARM
MOTOR / FAN	7.1	7.1 to 18.0	Above 18.0

EQUIPMENT SPECIFICATIONS				
DESCRIPTION	DRIVE	DRIVEN	MOUNTING	Y/N
Rated Speed	1400 RPM	NA	At Ground	Y
Power Rating	5.5 KW	NA	On Rigid Concrete	N
Bearing No. (DE/NDE)	6208 ZZ 6207 ZZ	NA	Above Ground Level	N
			On Vibro Pad	Y
Pulley Dia	NA	NA	On Steel Structure	Y

HIGHEST AMPLITUDES & HEALTH CONDITION			
LOCATION	VELOCITY (mm/sec) in rms		HEALTH CONDITION
	Previous (23.01.2017)	Present (22.03.2017)	
MOTOR	24.8	12.9	ALARM

OBSERVATIONS:

This equipment is indicating an "ALARM" behavior with maximum vibration amplitudes of 12.9 mm/s recorded in the Motor bearings.

ANALYSIS:

- Vibrations reduced significantly after partial execution of suggested corrective action at most of the locations but still higher as per the standards and in ALARM range.
- Symptoms of considerable structural looseness indicated in the system.

ACTION PLAN:

1. It is suggested to clean coating accumulated on fan impeller as per schedule, Meanwhile it is suggested to Plan for replacement / strengthening of rusted base frame on next available opportunity to reduce the vibration level further.

Last Measurement Report

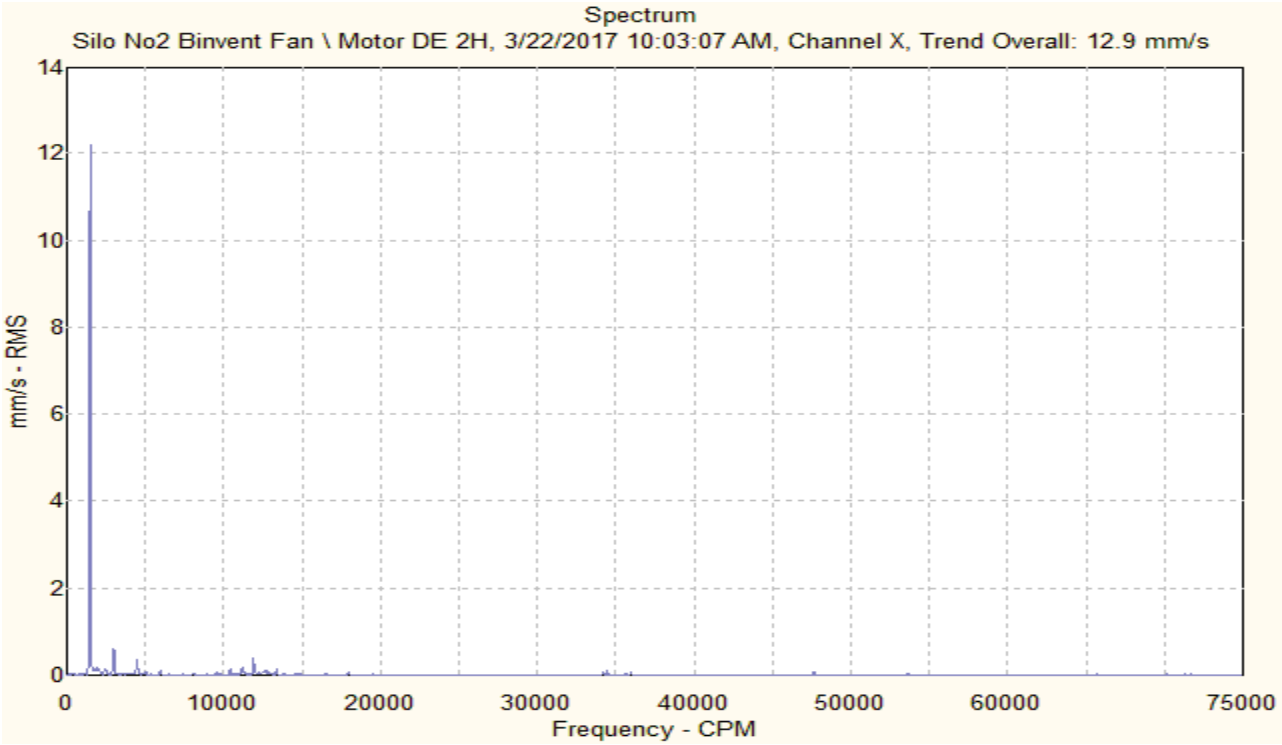
Source: Silo No2 Binvent Fan

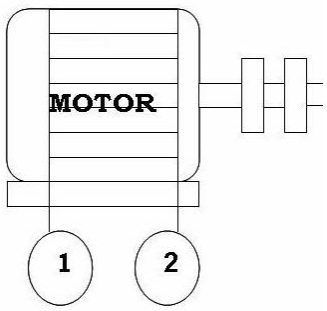
4/7/2017 12:42:53 PM

Last Measurement

POINT name	Date/Time	Last value	Units
Motor NDE 1H	3/22/2017 10:01:48 AM	10.791	mm/s
Motor NDE 1HL	3/22/2017 10:01:56 AM	12.089	mm/s
Motor NDE HA	3/22/2017 10:01:58 AM	0.239	g
Motor NDE 1HgE3	3/22/2017 10:02:02 AM	0.407	gE
Motor NDE 1V	3/22/2017 10:02:20 AM	3.154	mm/s
Motor NDE 1A	3/22/2017 10:02:36 AM	5.256	mm/s
Motor DE 2H	3/22/2017 10:03:07 AM	12.902	mm/s
Motor DE HA	3/22/2017 10:03:10 AM	0.241	g
Motor DE 2HgE3	3/22/2017 10:03:14 AM	0.405	gE
Motor DE 2V	3/22/2017 10:03:37 AM	2.420	mm/s
Motor DE 2A	3/22/2017 10:03:48 AM	6.186	mm/s

Silo No2 Binvent Fan \ Motor DE 2H



Vibration Analysis Report 22.03.2017		SKF RELIABILITY SYSTEMS	
EQUIPMENT S/NO.	25	EQUIPMENT NAME	SILO NO.3 BINVENT FAN
MACHINE SKETCH			

Vibration Limits for this equipment – Velocity in mm/sec (rms)			
POSITION	NORMAL	ALERT	ALARM
MOTOR / FAN	7.1	7.1 to 18.0	Above 18.0

EQUIPMENT SPECIFICATIONS				
DESCRIPTION	DRIVE	DRIVEN	MOUNTING	Y/N
Rated Speed	1400 RPM	NA	At Ground	Y
Power Rating	5.5 KW	NA	On Rigid Concrete	N
Bearing No. (DE/NDE)	6208 ZZ 6207 ZZ	NA	Above Ground Level	N
			On Vibro Pad	Y
Pulley Dia	NA	NA	On Steel Structure	Y

HIGHEST AMPLITUDES & HEALTH CONDITION			
LOCATION	VELOCITY (mm/sec) in rms		HEALTH CONDITION
	Previous (23.01.2017)	Present (22.03.2017)	
MOTOR	8.6	8.5	ALERT

OBSERVATIONS:

This equipment is indicating an "ALERT" behavior with maximum vibration amplitudes of 8.5 mm/s recorded in the Motor bearings.

ANALYSIS:

- Although vibrations reduced significantly as per the previous history but still in ALERT range.
- Symptoms of considerable unbalance indicated at fan impeller coupled with structural looseness.

ACTION PLAN:

1. It is suggested to clean coating accumulated on fan impeller on priority basis. Also ensure the frame bolt's length is optimum to provide rigidity to the system.
2. Plan for replacement / strengthening of rusted base frame on next available opportunity.

Last Measurement Report

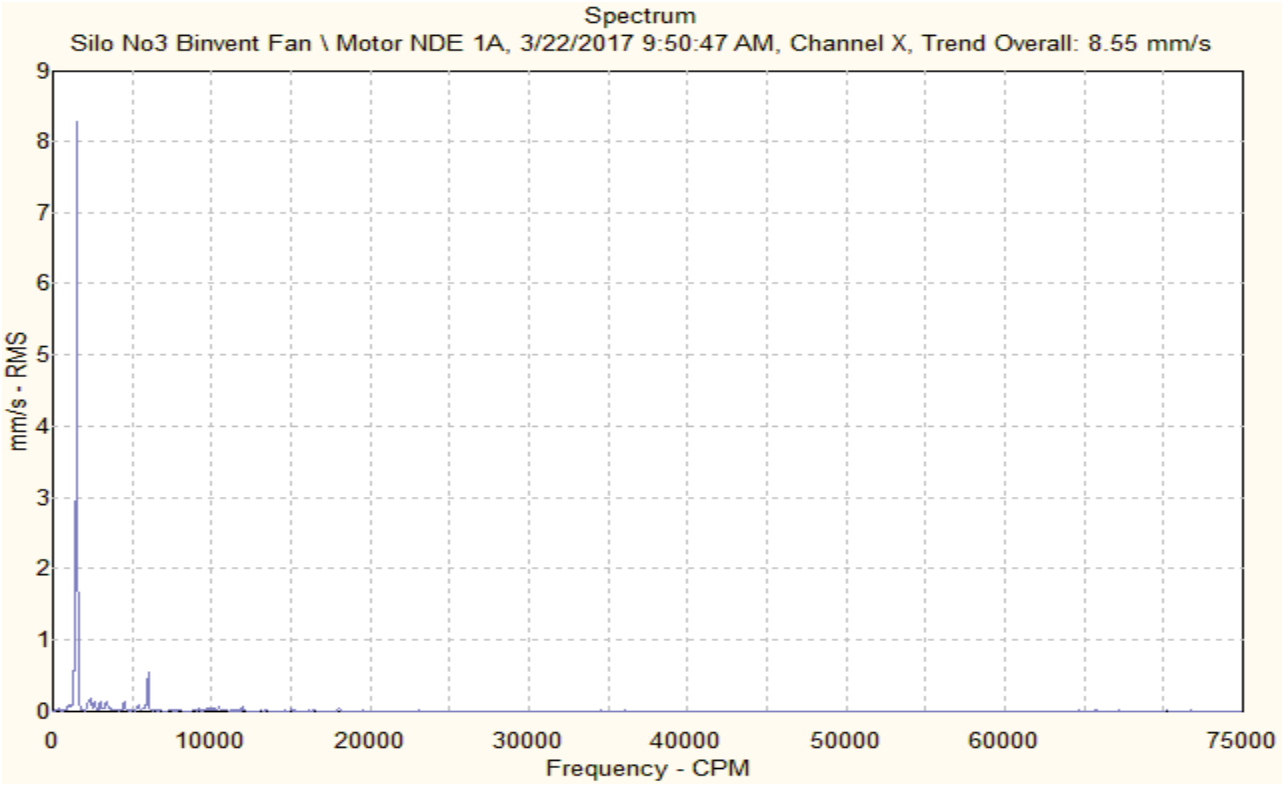
Source: Silo No3 Binvent Fan

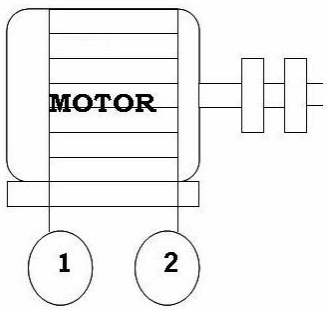
4/7/2017 12:43:36 PM

Last Measurement

POINT name	Date/Time	Last value	Units
Motor NDE 1H	3/22/2017 9:50:12 AM	2.693	mm/s
Motor NDE 1HL	3/22/2017 9:50:19 AM	2.273	mm/s
Motor NDE HA	3/22/2017 9:50:22 AM	0.113	g
Motor NDE 1HgE3	3/22/2017 9:50:26 AM	1.062	gE
Motor NDE 1V	3/22/2017 9:50:38 AM	2.506	mm/s
Motor NDE 1A	3/22/2017 9:50:47 AM	8.550	mm/s
Motor DE 2H	3/22/2017 9:50:56 AM	3.654	mm/s
Motor DE HA	3/22/2017 9:50:59 AM	0.152	g
Motor DE 2HgE3	3/22/2017 9:51:03 AM	0.820	gE
Motor DE 2V	3/22/2017 9:51:31 AM	2.667	mm/s
Motor DE 2A	3/22/2017 9:51:45 AM	8.559	mm/s

Silo No3 Binvent Fan \ Motor NDE 1A



Vibration Analysis Report 22.03.2017		SKF RELIABILITY SYSTEMS	
EQUIPMENT S/NO.	26	EQUIPMENT NAME	SILO NO.4 BINVENT FAN
MACHINE SKETCH			

Vibration Limits for this equipment – Velocity in mm/sec (rms)			
POSITION	NORMAL	ALERT	ALARM
MOTOR / FAN	7.1	7.1 to 18.0	Above 18.0

EQUIPMENT SPECIFICATIONS				
DESCRIPTION	DRIVE	DRIVEN	MOUNTING	Y/N
Rated Speed	1400 RPM	NA	At Ground	Y
Power Rating	5.5 KW	NA	On Rigid Concrete	N
Bearing No. (DE/NDE)	6208 ZZ 6207 ZZ	NA	Above Ground Level	N
			On Vibro Pad	Y
Pulley Dia	NA	NA	On Steel Structure	Y

HIGHEST AMPLITUDES & HEALTH CONDITION			
LOCATION	VELOCITY (mm/sec) in rms		HEALTH CONDITION
	Previous (23.01.2017)	Present (22.03.2016)	
MOTOR	2.7	3.2	NORMAL

OBSERVATIONS:

This equipment is indicating an "NORMAL" behavior with maximum vibration amplitudes of 3.2 mm/s recorded in the Motor bearings.

ANALYSIS:

- The health condition of the equipment is NORMAL as per ISO standards.

ACTION PLAN:

1. Ok to run under trend monitoring.

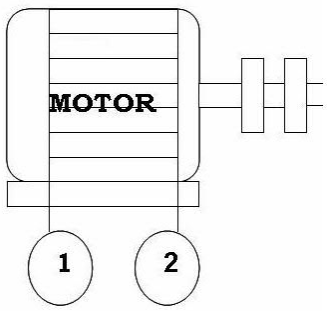
Last Measurement Report

Source: Silo No4 Binvent Fan

4/7/2017 12:44:27 PM

Last Measurement

POINT name	Date/Time	Last value	Units
Motor NDE 1H	3/22/2017 9:52:05 AM	1.281	mm/s
Motor NDE 1HL	3/22/2017 9:52:12 AM	1.699	mm/s
Motor NDE HA	3/22/2017 9:52:15 AM	0.095	g
Motor NDE 1HgE3	3/22/2017 9:52:19 AM	0.263	gE
Motor NDE 1V	3/22/2017 9:52:40 AM	1.908	mm/s
Motor NDE 1A	3/22/2017 9:53:02 AM	3.280	mm/s
Motor DE 2H	3/22/2017 9:53:32 AM	1.397	mm/s
Motor DE HA	3/22/2017 9:53:35 AM	0.120	g
Motor DE 2HgE3	3/22/2017 9:53:39 AM	0.384	gE
Motor DE 2V	3/22/2017 9:53:50 AM	2.653	mm/s
Motor DE 2A	3/22/2017 9:54:00 AM	3.054	mm/s

Vibration Analysis Report 22.03.2017		SKF RELIABILITY SYSTEMS	
EQUIPMENT S/NO.	27	EQUIPMENT NAME	SILO NO.6 BINVENT FAN
MACHINE SKETCH			

Vibration Limits for this equipment – Velocity in mm/sec (rms)			
POSITION	NORMAL	ALERT	ALARM
MOTOR / FAN	7.1	7.1 to 18.0	Above 18.0

EQUIPMENT SPECIFICATIONS				
DESCRIPTION	DRIVE	DRIVEN	MOUNTING	Y/N
Rated Speed	1400 RPM	NA	At Ground	Y
Power Rating	5.5 KW	NA	On Rigid Concrete	N
Bearing No. (DE/NDE)	6208 ZZ 6207 ZZ	NA	Above Ground Level	N
			On Vibro Pad	Y
Pulley Dia	NA	NA	On Steel Structure	Y

HIGHEST AMPLITUDES & HEALTH CONDITION			
LOCATION	VELOCITY (mm/sec) in rms		HEALTH CONDITION
	Previous (23.01.2017)	Present (22.03.2017)	
MOTOR	4.4	3.2	NORMAL

OBSERVATIONS:

This equipment is indicating an "NORMAL" behavior with maximum vibration amplitudes of 3.2 mm/s recorded in the Motor bearings.

ANALYSIS:

- The health condition of the equipment is NORMAL as per ISO standards.

ACTION PLAN:

1. Ok to run under trend monitoring following routine coating cleaning.

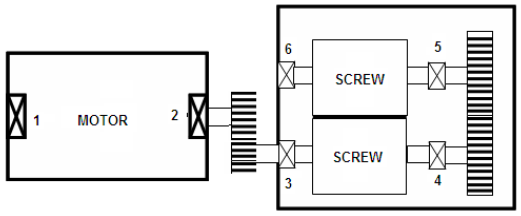
Last Measurement Report

Source: Silo No6 Binvent Fan

4/7/2017 12:44:57 PM

Last Measurement

POINT name	Date/Time	Last value	Units
Motor NDE 1H	3/22/2017 9:54:28 AM	1.260	mm/s
Motor NDE 1HL	3/22/2017 9:54:36 AM	1.455	mm/s
Motor NDE HA	3/22/2017 9:54:38 AM	0.187	g
Motor NDE 1HgE3	3/22/2017 9:54:42 AM	0.547	gE
Motor NDE 1V	3/22/2017 9:54:52 AM	1.067	mm/s
Motor NDE 1A	3/22/2017 9:55:14 AM	3.221	mm/s
Motor DE 2H	3/22/2017 9:55:21 AM	0.854	mm/s
Motor DE HA	3/22/2017 9:55:24 AM	0.085	g
Motor DE 2HgE3	3/22/2017 9:55:28 AM	0.273	gE
Motor DE 2V	3/22/2017 9:55:38 AM	1.427	mm/s
Motor DE 2A	3/22/2017 9:55:47 AM	3.076	mm/s

Vibration Analysis Report 22.03.2017		SKF RELIABILITY SYSTEMS	
EQUIPMENT S/NO.	28	EQUIPMENT NAME	COMPRESSOR - 1
MACHINE SKETCH		 SCREW COMPRESSOR	

Vibration Limits for this equipment – Velocity in mm/sec (rms)			
POSITION	NORMAL	ALERT	ALARM
MOTOR / FAN	7.1	7.1 to 18.0	Above 18.0

EQUIPMENT SPECIFICATIONS				
DESCRIPTION	DRIVE	DRIVEN	MOUNTING	Y/N
Rated Speed			At Ground	Y
Power Rating			On Rigid Concrete	N
Bearing No. (DE/NDE)			Above Ground Level	N
			On Vibro Pad	Y
Pulley Dia			On Steel Structure	Y

HIGHEST AMPLITUDES & HEALTH CONDITION			
LOCATION	VELOCITY (mm/sec) in rms		HEALTH CONDITION
		Present (22.03.2016)	
MOTOR		3.0 (8.5 gE)	NORMAL
COM[PRESSOR		6.0 (12.8 gE)	NORMAL

OBSERVATIONS:

This equipment is indicating an "NORMAL" behavior with maximum vibration amplitudes of 6.0 mm/s recorded in the Compressor bearings.

ANALYSIS:

- The health condition of the equipment is in NORMAL range as per standards. Vibration data taken for the first time.

ACTION PLAN:

1. Trend monitoring is required to further comment on the machine health condition. Its is suggested to keep close monitoring over change in any parameter during routine physical observations.

Last Measurement Report

Source: Compressor-1

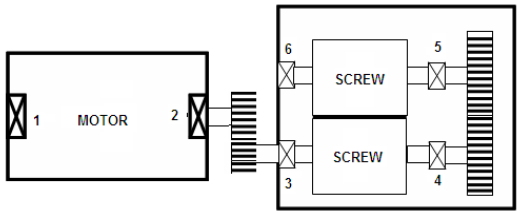
4/7/2017 12:45:28 PM

Last Measurement

POINT name	Date/Time	Last value	Units
MOTOR NDE 1 HV	3/22/2017 12:28:05 PM	2.623	mm/s
MOTOR NDE 1 HVH	3/22/2017 12:28:07 PM	2.629	mm/s
MOTOR NDE 1 HA	3/22/2017 12:28:08 PM	0.827	g
MOTOR NDE 1 HEA	3/22/2017 12:28:11 PM	1.754	gE
MOTOR NDE 1 VV	3/22/2017 12:28:23 PM	2.519	mm/s
MOTOR NDE 1 AV	3/22/2017 12:28:31 PM	2.276	mm/s
MOTOR DE 2 HV	3/22/2017 12:26:55 PM	2.013	mm/s
MOTOR DE 2 HVH	3/22/2017 12:26:58 PM	3.027	mm/s
MOTOR DE 2 HA	3/22/2017 12:26:59 PM	4.881	g
MOTOR DE 2 HEA	3/22/2017 12:27:02 PM	8.521	gE
MOTOR DE 2 VV	3/22/2017 12:27:13 PM	2.909	mm/s
MOTOR DE 2 AV	3/22/2017 12:27:31 PM	1.921	mm/s
COMP LP DE 3 HV	3/22/2017 12:19:50 PM	1.699	mm/s
COMP LP DE 3 HVH	3/22/2017 12:19:52 PM	3.188	mm/s
COMP LP DE 3 HA	3/22/2017 12:19:55 PM	6.531	g
COMP LP DE 3 HEA	3/22/2017 12:20:00 PM	11.418	gE
COMP LP DE 3 VV	3/22/2017 12:20:37 PM	1.943	mm/s
COMP LP DE 3 AV	3/22/2017 12:21:02 PM	3.928	mm/s
COMP LP NDE 4 HV	3/22/2017 12:21:27 PM	4.139	mm/s
COMP LP NDE 4 HVH	3/22/2017 12:21:30 PM	4.243	mm/s
COMP LP NDE 4 HA	3/22/2017 12:21:31 PM	2.127	g
COMP LP NDE 4 HEA	3/22/2017 12:21:34 PM	8.451	gE
COMP LP NDE 4 VV	3/22/2017 12:21:55 PM	4.616	mm/s
COMP LP NDE 4 AV	3/22/2017 12:22:10 PM	4.249	mm/s
COMP HP DE 5 HV	3/22/2017 12:22:59 PM	2.842	mm/s
COMP HP DE 5 HVH	3/22/2017 12:23:02 PM	4.493	mm/s
COMP HP DE 5HA	3/22/2017 12:23:04 PM	4.807	g
COMP HP DE 5 HEA	3/22/2017 12:23:06 PM	12.836	gE
COMP HP DE 5 VV	3/22/2017 12:23:19 PM	4.294	mm/s
COMP HP DE 5 AV	3/22/2017 12:23:49 PM	3.285	mm/s
COMP HP NDE 6 HV	3/22/2017 12:25:28 PM	4.844	mm/s

Last Measurement

POINT name	Date/Time	Last value	Units
COMP HP NDE 6 HVH	3/22/2017 12:25:31 PM	5.026	mm/s
COMP HP NDE 6 HA	3/22/2017 12:25:33 PM	2.310	g
COMP HP NDE 6 HEA	3/22/2017 12:25:35 PM	5.750	gE
COMP HP NDE 6 VV	3/22/2017 12:25:53 PM	6.058	mm/s
COMP HP NDE 6 AV	3/22/2017 12:26:15 PM	4.711	mm/s

Vibration Analysis Report 22.03.2017		SKF RELIABILITY SYSTEMS	
EQUIPMENT S/NO.	29	EQUIPMENT NAME	COMPRESSOR - 2
MACHINE SKETCH		 SCREW COMPRESSOR	

Vibration Limits for this equipment – Velocity in mm/sec (rms)			
POSITION	NORMAL	ALERT	ALARM
MOTOR / FAN	7.1	7.1 to 18.0	Above 18.0

EQUIPMENT SPECIFICATIONS				
DESCRIPTION	DRIVE	DRIVEN	MOUNTING	Y/N
Rated Speed			At Ground	Y
Power Rating			On Rigid Concrete	N
Bearing No. (DE/NDE)			Above Ground Level	N
			On Vibro Pad	Y
Pulley Dia			On Steel Structure	Y

HIGHEST AMPLITUDES & HEALTH CONDITION			
LOCATION	VELOCITY (mm/sec) in rms		HEALTH CONDITION
		Present (22.03.2016)	
MOTOR		7.3 (14.0 gE)	ALERT
COM[PRESSOR		6.6 (12.0 gE)	NORMAL

OBSERVATIONS:

This equipment is indicating an "ALERT" behavior with maximum vibration amplitudes of 7.3 mm/s recorded in the Motor bearings.

ANALYSIS:

- The health condition of the equipment is just above ALERT range as per standards.
- High frequency acceleration & velocity vibrations are being transferred from the driven end to motor.

ACTION PLAN:

1. Initially flush & re-lubricate motor bearings. Trend monitoring & technical data is required to further comment on the machine health condition. Its is suggested to keep close monitoring over change in any parameter during routine physical observations.

Last Measurement Report

Source: Compressor-2

4/7/2017 12:45:57 PM

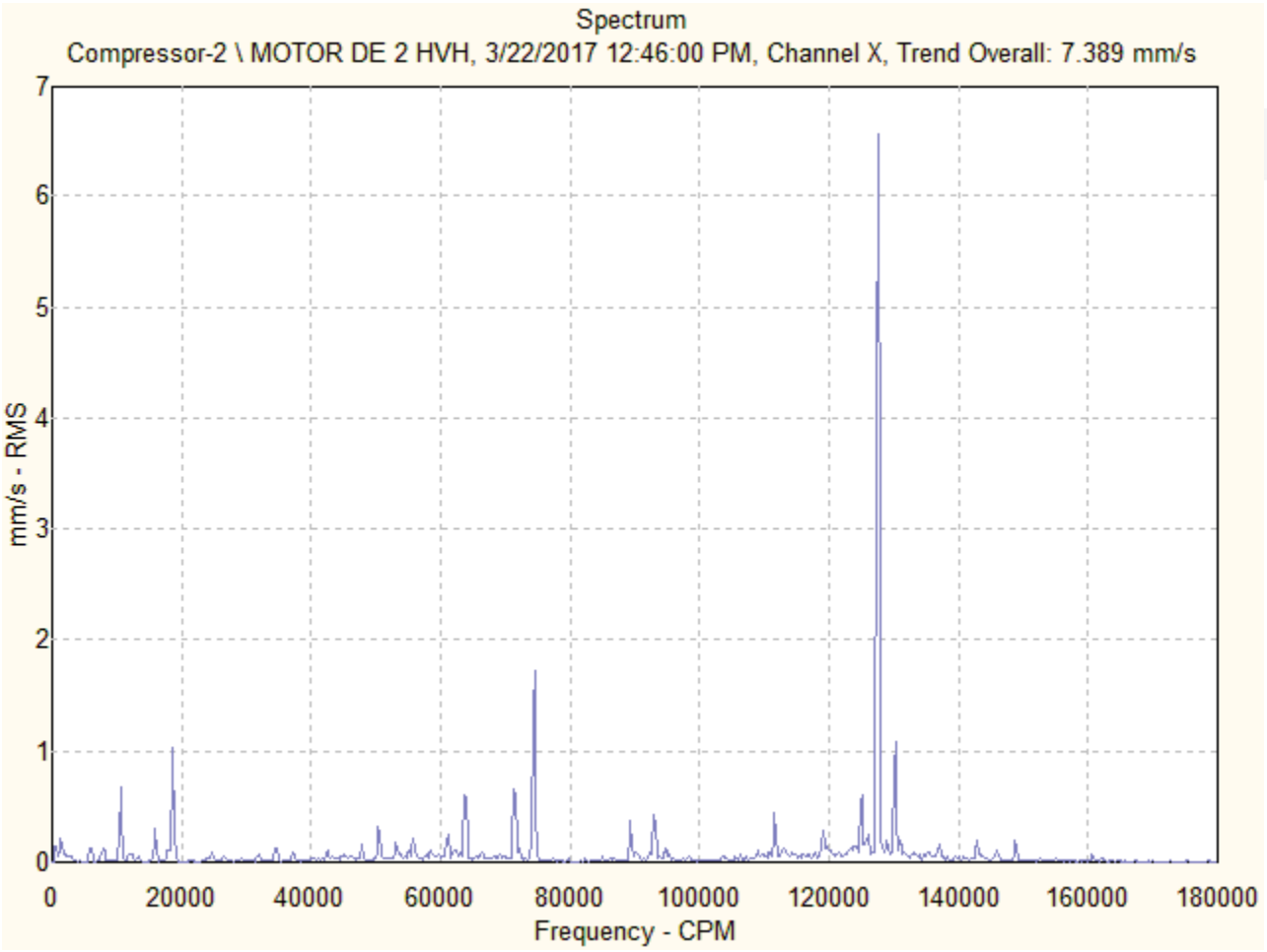
Last Measurement

POINT name	Date/Time	Last value	Units
MOTOR NDE 1 HV	3/22/2017 12:47:01 PM	1.512	mm/s
MOTOR NDE 1 HVH	3/22/2017 12:47:04 PM	1.787	mm/s
MOTOR NDE 1 HA	3/22/2017 12:47:05 PM	0.675	g
MOTOR NDE 1 HEA	3/22/2017 12:47:08 PM	1.739	gE
MOTOR NDE 1 VV	3/22/2017 12:47:19 PM	2.385	mm/s
MOTOR NDE 1 AV	3/22/2017 12:47:30 PM	2.122	mm/s
MOTOR DE 2 HV	3/22/2017 12:45:58 PM	1.561	mm/s
MOTOR DE 2 HVH	3/22/2017 12:46:00 PM	7.389	mm/s
MOTOR DE 2 HA	3/22/2017 12:46:01 PM	13.468	g
MOTOR DE 2 HEA	3/22/2017 12:46:05 PM	14.053	gE
MOTOR DE 2 VV	3/22/2017 12:46:18 PM	2.219	mm/s
MOTOR DE 2 AV	3/22/2017 12:46:34 PM	1.849	mm/s
COMP LP DE 3 HV	3/22/2017 12:48:20 PM	1.226	mm/s
COMP LP DE 3 HVH	3/22/2017 12:48:23 PM	1.432	mm/s
COMP LP DE 3 HA	3/22/2017 12:48:24 PM	2.545	g
COMP LP DE 3 HEA	3/22/2017 12:48:27 PM	5.875	gE
COMP LP DE 3 VV	3/22/2017 12:48:39 PM	1.715	mm/s
COMP LP DE 3 AV	3/22/2017 12:48:52 PM	2.385	mm/s
COMP LP NDE 4 HV	3/22/2017 12:49:07 PM	4.173	mm/s
COMP LP NDE 4 HVH	3/22/2017 12:49:09 PM	4.231	mm/s
COMP LP NDE 4 HA	3/22/2017 12:49:11 PM	3.316	g
COMP LP NDE 4 HEA	3/22/2017 12:49:14 PM	8.790	gE
COMP LP NDE 4 VV	3/22/2017 12:49:25 PM	3.085	mm/s
COMP LP NDE 4 AV	3/22/2017 12:49:39 PM	2.900	mm/s
COMP HP DE 5 HV	3/22/2017 12:43:46 PM	1.968	mm/s
COMP HP DE 5 HVH	3/22/2017 12:43:48 PM	2.190	mm/s
COMP HP DE 5HA	3/22/2017 12:43:50 PM	8.787	g
COMP HP DE 5 HEA	3/22/2017 12:43:53 PM	12.034	gE
COMP HP DE 5 VV	3/22/2017 12:44:03 PM	1.686	mm/s
COMP HP DE 5 AV	3/22/2017 12:44:14 PM	4.342	mm/s
COMP HP NDE 6 HV	3/22/2017 12:44:39 PM	6.546	mm/s

Last Measurement

POINT name	Date/Time	Last value	Units
COMP HP NDE 6 HVH	3/22/2017 12:44:41 PM	6.658	mm/s
COMP HP NDE 6 HA	3/22/2017 12:44:43 PM	4.686	g
COMP HP NDE 6 HEA	3/22/2017 12:44:45 PM	8.903	gE
COMP HP NDE 6 VV	3/22/2017 12:44:59 PM	4.017	mm/s
COMP HP NDE 6 AV	3/22/2017 12:45:19 PM	4.827	mm/s

Compressor-2 \ MOTOR DE 2 HVH



IV. CONCLUSION

During the visit of our engineers to your site, on **22.03.2017**, detailed vibration measurement and analysis was carried out on the following machines. The health condition of equipment is classified below.

MACHINE CLASSIFIED UNDER ALARM CATEGORY

S.NO	EQUIPMENT NAME
1	SILO-2 BINVENT FAN

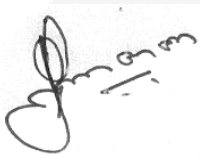
MACHINE CLASSIFIED UNDER ALERT CATEGORY

S.NO	EQUIPMENT NAME
1	GENERAL DC FAN
2	COATING CIRCUIT MAIN AIR FAN
3	COATING FUGITIVE FAN
4	UN-COATING FUGITIVE FAN
5	HAMMER MILL RIGHT (DRIVE#1)
6	SILO FEED BUCKET ELEVATOR
7	CLASSIFIER AIR SLIDE FAN
8	SEAL AIR FAN
9	SILO-3 BINVENT FAN
10	COMPRESSOR - 2

MACHINE CLASSIFIED UNDER NORMAL CATEGORY

S.NO	EQUIPMENT NAME
1	HAMMER MILL DC FAN
2	COATING CIRCUIT BOOSTER FAN
3	SELOX MAIN AIR FAN
4	UNCOATED TRANSFER BLOWER
5	COATED TRANSFER BLOWER
6	BALL MILL
7	HAMMER MILL LEFT (DRIVE#2)
8	CLASSIFIER

9	DE-AGGLOMERATOR
10	BLENDER – HOUSING SIDE
11	BLENDER – DOOR SIDE
12	BLENDER AERATION BLOWER
13	PRODUCT SILO AERATION BLOWER
14	BALL MILL DISCHARGE BUCKET ELEVATOR
15	SILO-1 BINVENT FAN
16	SILO-4 BINVENT FAN
17	SILO-6 BINVENT FAN
18	COMPRESSOR - 1



for SKF India Limited