HI-SPEED INDUSTRIAL SERVICE

MILLINGTON, TN

October 22, 2021

IFF

Subject: MSP October vibration report

Most of the machines surveyed were found to be in good condition with the exception of the following:

***QualiTest***® uses a four step rating system for defects.

**Class I:** Defect is present, but effect on reliability is not clear; no immediate action is required. Continue to normally monitor.

**Class II:** Defect (s) present that may cause problem in long term (2-6 months.). Repair during normal maintenance scheduling. Continue to monitor.

**Class III;** Defect (s) present that may cause failure in short term (less than 2 months.). This should be addressed as soon as practical, with a high maintenance priority. Increase monitoring frequency.

**Class IV;** Defect (s) present that makes continued reliability unpredictable, and possibility of secondary damage is high. Repairs should be made ASAP. An unscheduled shutdown should be considered for repairs

***Hi-Speed*** **Industrial Service** tests and inspects industrial machinery and equipment and makes recommendations concerning maintenance and repairs based on its experience in the field of industrial repair and maintenance. The information contained herein is provided as an opinion only, not as a guaranty or warranty of the matters discussed herein.

This completes our assessment of your equipment for this survey. Thank you for your business and feel free to call if you have any comments or questions.

Sincerely,

David W Shook

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**MSP 10-22-21 Download**

**11-5304 PH1 PACKER SURGE BIN ASP FAN**
Increase in fan speed vibration in the motor inboard horizontal. Inspect the units' fasteners, base, and belt and sheaves. **Rated a Class I Defect.**

**14-3039 FLAKE BIN N ASPIRATION FAN 3**
Vibrations have dropped even more this month. No rating.

**14-3090 MSP WET IN TRANSFER PUMP**
Vibrations have dropped even more this month. No rating.

**14-3108 SULFITE WORK TANK DISCH PUMP**
Motor axial is up at shaft speed. Check the coupling and alignment as time allows. **Rated a Class I Defect.**

**14-3137 #2 1ST EXT CENT DEFOAM PUMP**
Nonrated.

**14-3141 #1 1ST EXTRACTION CENTRIFUGE**
The C2A overall measurement is strong at almost1"/second velocity peak at 2x RPM. We suspect some kind of misalignment or coupling issue. Inspect soon. **Rated a Class III Defect.** The centrifuge bearings show a few shaft speed harmonics. Inspect for mechanical looseness in the bearings and alignment. The motor is showing strong non-synchronous harmonics which we now believe to be possible race defects. **Rated a Class II Defect.**

**14-3149 #4 1rd EXTRACTION CENTRIFUGE SHARPLE**
The motor vibrations have significantly. The centrifuge bearings show a strong shaft speed vibration and a few harmonics. Clean and flush the unit. Inspect for mechanical looseness in the bearings and alignment. Check all fasteners and structures. **Rated a Class III Defect.**

**14-3151 #2 1ST EXT CENTRIFUGE SHARPLE**
The centrifuge bearings show possible mechanical looseness in the bearing or fits. It is stronger on the input. Check the fasteners, inspect for excessive clearances, run out and drive train alignment. Clean and flush. **Rated a Class II Defect.**

**14-3161 #3 1ST EXTRACTION CENTRIFUGE SHARPLE**
The centrifuge bearings show possible mechanical looseness in the bearing or fits. A strong half harmonic seems to be present in the outboard axial. This could be a strong mechanical rub in the unit. It could also be cocked, have run out or some misalignment in the drivetrain. Check to ensure there is no rubbing between rotating and stationary parts. Check the fasteners, inspect for excessive clearances, run out and drive train alignment. Clean and flush. **Rated a Class III Defect.**

**14-3171 #5 2nd EXTRACTION CENTRIFUGE SHARPLE**
The centrifuge bearings show 1x and 2x RPM vibrations. It could have run out or some misalignment in the drivetrain. Check the fasteners, inspect for excessive clearances, run out and drive train alignment. Clean and flush. The motor has slight bearing wear. **Rated a Class II Defect.**

**14-3179 #4 Centrifuge 2nd Extraction Defoamer Pump**
Motor data shows elevated dominant 1x RPM vibration with a smaller 2x Vibration also. Inspect the unit base and all fasteners. Check the coupling and alignment. **Rated a Class II Defect.**

**14-3207 #3 1st Ext Def Pump**
No recent data.

**14-3246 C30 #1 WASHING CENTRIFUGE**
Large jump in centrifuge vibrations at shaft speed for the input measurement near 1"/second velocity peak overall. Clean, flush and inspect. **Rated a Class III Defect.**

**14-3256 C30 #2 WASHING CENTRIFUGE**
Large jump in centrifuge vibrations at shaft speed for the input measurement near 1"/second velocity peak overall. Clean, flush and inspect. **Rated a Class III Defect.**

**14-3266 C30 #3 WASHING CENTRIFUGE**
Elevated centrifuge speed vibration in centrifuge axial. Motor speed vibrations are also evident. Inspect the drive train for wear, run out and alignment. Clean and flush the centrifuge. Check all fasteners and structures. **Rated a Class II Defect.**

**14-3276 C30 #4 WASHING CENTRIFUGE**
Motor has possible very early bearing defects. Elevated centrifuge speed vibration in centrifuge. Inspect the drive train for wear, run out and alignment. Clean and flush the centrifuge. Check all fasteners and structures. **Rated a Class II Defect.**

**14-3289 WEST WASHING RESLURRY PUMP**
No issues.

**14-3296 #8 CON CENTRIFUGE SHARPLE**
Slightly elevated vibrations in centrifuge with shaft speed dominant. Clean and flush. **Rated a Class I Defect.**

**14-3304 #6 CON CENTRIFUGE SHARPLE**
Centrifuge has a strong 1x RPM vibration in the inboard horizontal and axial. There are also multiple harmonics in the bearings which could indicate mechanical looseness. Clean and flush the unit. Inspect the bearings, fasteners, structure, and shaft for defects wear and alignment soon. **Rated a Class III Defect.**

**14-3320 #7 CON CENTRIFUGE SHARPLE**
Centrifuge still has a strong 1x RPM vibration and a few harmonics. Inspect for mechanical looseness and alignment. Clean and Flush. **Rated a Class III Defect.**

**14-3425 MSP-EAST IDN TANK PUMP**
No recent data.

**14-3550 N BOGEY VACUUMIZER DIS PUMP**
No recent data.

**14-3608 Cooling Ring Intake Fan**
Motor and fan speed vibrations are dominant in the shaft end of the motor. Inspect the unit for drive train component wear and alignment. Check all fasteners. **Rated a Class II Defect.**

**14-3618 Spray Dryer East Exhaust Fan**
The Motor vibration data still shows low level non-synchronous harmonics which are most likely slight bearing defect frequencies in the DE bearing. Some vibrations are elevated in the motor and fan. Vibration peaks do not match up to shaft speeds. Please confirm speeds when taking readings. Recommend inspecting the drive train for buildup in sheaves, alignment, fasteners, and belt tension. **Rated a Class I Defect.**

**14-3627 DRYER NE CS FILTER BLOWER**
Blower shows an increase in vertical vibrations at shaft speed. Inspect the unit for loose fasteners, sheave build up, damage, or wear. **Rated a Class II Defect.**

**14-3634 DRYER SW CS FILTER BLOWER**
Blower shows a large increase in vertical vibrations at shaft speed. Inspect the unit for loose fasteners, sheave build up, damage, or wear. **Rated a Class III Defect.**

**14-3636 SPRAY DRYER WEST EXHAUST FAN**
Fan axial vibration about the same possible at shaft speed. Low amplitude harmonics are also present. Still shows some drivetrain issues. Possible alignment or belt issue. Inspect as time allows. **Rated a Class II Defect.** Please confirm speeds when taking readings.

**14-3642 DRYER NW CS FILTER BLOWER**
Blower unit has an increase in vibrations 1x and 4x shaft speed. Inspect the unit. Check all fasteners and drive train components. **Rated a Class II Defect.**

**14-3649 PRODUCT COLLECTOR FAN**
The data still indicates possible looseness in the inboard fan bearing or misalignment. Data shows a possible 1x RPM vibration and a few harmonics. Inspect the bearing for excessive clearance by performing a lift check. Check all fasteners and belts and sheaves. **Rated a Class II Defect.**
**Vibrations do not match database speeds. Please confirm operating speed during data collection.**

**14-3710 MSP RIBBON BLENDER**
There are multiple vibration peaks below 30 Hz. The FMAX is too high, and the lines of resolution are too low. Please adjust the database analysis parameter sets for the unit. Please have technicians confirm speed of unit during data collection to help analysis. Vibration peaks don't match database speed. **Rated a Class I Defect.**

**14-3712**
No recent data.

**14-3800 DOUBLE PADDLE MIXER CONVEYOR**
Vibration data for the motor shows a dominant sub-synchronous peak. This could be a resonance or an issue with the conveyor shaft. Inspect the unit for poor fasteners, structures, and drive train components. **Rated a Class II Defect.**

**14-3806 FEED DRYER DISCH TRAN BLOWER**
Apparent blower half harmonic vibrations throughout the unit. The blower could be worn or under high loading. Check the operational parameters and the unit in general. **Rated a Class II Defect.**

**14-3828 FEED DRYER RECYCLE BLOWER**
Vibrations are still up in the blower axials and verticals. The vibrations are dominated by a peak at about 86.5 Hz at close to 3x motor speed. This is possible lobe pass or some resonance. Inspect the unit structure, fasteners, and concrete base. Ensure there is no pipe strain. **Rated a Class II Defect.**

**14-3832 F.D. RECYCLE SCREW CONVEYOR**
Vibration data for the motor shows a drop in vibrations. No actions required further.

**14-3836 DRY FEED RECEIVER ASP FAN**
Motor vibrations are strong for some points. We suspect that they are at motor shaft speed, but the database speeds do not match. Inspect the motor base, fasteners, and structure for defects. Check the drive train components for wear, eccentricity, and alignment. **Rated a Class II Defect. Please confirm speeds.**

**14-3843 S INLET BURNER 1 PROCESS FAN**
Motor vibrations are down. The dominant vibration peak is at 22.73 Hz, and we believe it is a shaft speed vibration, but the database speeds do not match. Inspect the base, fasteners, and structure for defects. Check the drive train components for wear, eccentricity, and alignment. Clean and inspect the fan wheel. **Rated a Class I Defect.**

**14-3844 S BURNER #1 COMBUSTION FAN**
Unit vibrations are up. The dominant vibration peak is still at about 22 Hz, and we believe it is a shaft speed vibration, but the database speeds do not match. Inspect the base, fasteners, and structure for defects. Check the drive train components for wear, eccentricity, and alignment. Clean and inspect the fan wheel. **Rated a Class I Defect.**

**14-3863 MSP-FEED DRYER EXHAUST FAN**
The motor speed is probably incorrect and is most likely about 1300 RPM. We see a motor speed vibration and a sub-synchronous vibration in the motor data. Inspect the base, fasteners, and structure for defects. Check the drive train components for wear, eccentricity, and alignment. Clean and inspect the fan wheel. **Rated a Class I Defect.**

**14-4085 #9 CON CENTRIFUGE SHARPLE**
Centrifuge still has a strong 1x RPM vibration and many harmonics which could indicate mechanical looseness. Inspect the bearings, fasteners, structure, and shaft for defects wear and alignment soon. **Rated a Class III Defect.**

**14-4085-08 #9 Con Centrifuge Oil Pump**
Vibration has not changed much over time. No action required.

**14-4095 MSP-#4 CURD POT GRINDER**
Grinder speed vibration in motor. Inspect the unit drivetrain for wear and alignment. Check all fasteners. **Rated a Class I Defect.**

**14-4203 HOT WATER PUMP TO H-HEATER**
Units still shows what appears to be1x and 2x shaft speed vibration in the pump. Vibrations have increased. Confirm shaft speed. Check the coupling, shaft alignment, fasteners, base, and structures. Pump could be slightly worn. **Rated a Class II Defect.**

**14-4208 90DEGREE PROCESS WTR PUMP**
Pump vibration shows 1x, and 2x RPM vibration with the 2x dominant. Vibrations have slightly decreased. Check and inspect the unit fasteners, coupling, alignment, and base. **Rated a Class III Defect.**

**14-4209 90D PROCESS STANDBY WTR PUMP**
Pump vibration still shows 1x, 2x, and 3x RPM vibrations with the 2x dominant. Overall for pump input is near 1"/second velocity peak. Check and inspect the unit fasteners, coupling, alignment, and base. Pump bearing are also in distress. Check and inspect the pump bearings for adequate lubrication. **Rated a Class III Defect.**