HI-SPEED INDUSTRIAL SERVICE

MILLINGTON, TN

August 25, 2021

IFF

Subject: August 800 Ton Grinding South Utilities 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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800 T GRINDING

15-3043 N GRIND MILL RECEIVER ASP FAN
Vibration data shows another increase in fan speed vibration amplitude in the motor and fan. Motor is higher. Inspect the unit for loose fasteners, structural defects, sheave alignment, belt tension, and build up or damage on the fan wheel. Trim balancing will be needed, or fan wheel replaced. **Rated a Class IV Defect.**

15-3048 S GRIND MILL RECEIVER ASP FAN
Vibration data shows an elevated fan speed vibration in the fan, and especially in the motor axial. Fan bearing data also shows possible blade pass and slight looseness. Sheave alignment is the main issue, especially in the motor. Inspect the unit for loose fasteners, Motor and fan base structural defects, sheave alignment, belt tension, and build up or damage on the fan wheel. Check for proper air flow parameters. Trim balance the fan. **Rated a Class III Defect.**

14-3043 N DUST COLLECTOR ASP FAN #1
Motor vibrations have dropped to acceptable levels however, the outboard fan bearing data is dominated by a 6x RPM vibration that is most likely blade pass. Check operational parameters and inspect the fan wheel for proper positioning as time allows. **Rated a Class I Defect.**

14-3016 MSP N FLAKE GRINDING MILL
Motor and fan speed vibrations in multiple points. Inspect the unit for wear and alignment in the drive train components. Inboard grinder bearing data shows possible early bearing defect frequencies. Inspect the grinder bearings as time allows. **Rated a Class II Defect.**

14-3029 MSP S FLAKE GRINDING MILL
Slightly elevated motor speed vibrations. Inspect for drive train wear and alignment. Grinding mill bearings show slight elevation in spectral noise. Could be a lubrication issue or signs of early bearing defects. Inspect and lubricate if needed as time allows. **Rated a Class I Defect.**

15-3029 MS2P S FLAKE GRINDING MILL
Motor data shows 2 issues. There are both motor shaft and mill shaft speed vibrations in the motor. The motor bearings also show possible defects due to new high frequency peaks in the bearing spectrums. Inspect the unit for wear and alignment in the drive train components. Inspect the motor for lubrication issues and grease as needed. **Rated a Class II Defect.**

15-3034 GROUND FLAKE TRANSFER BLOWER
The motor shaft speed vibration has increased. Inspect the unit fasteners, structure and drive train components for wear and alignment The motor bearings also show possible defects due to new high frequency peaks in the bearing spectrums. Inspect the motor for lubrication issues and grease as needed. **Rated a Class II Defect. Please confirm shaft speeds.**

22-5031 W 800T TRANS DIS BLOWER
Apparent blower and motor shaft speed vibrations in the motor. Inspect the unit fasteners and drive train components for defects and alignment. Blower bearings also shows multiple harmonic peaks. Possible looseness in the bearing fits. **Rated a Class II Defect. Please confirm shaft speeds to help identify issues.**

22-5032 E 800T BIN TRANS DIS BLOWER
Bad or missing data on August 11.

22-0614 S FLAKE BLOWER @ TRACK #1
Motor still has 1x RPM vibration. Inspect all fasteners and structures, and drive train for alignment and worn components. **Rated a Class I Defect.**

22-0687 TRACK 1 VACUUM ASP BLOWER
Motor data shows both motor shaft speed and possible blower shaft speed vibrations. The amplitudes have dropped from the last data. Inspect the unit fasteners and drive train components for defects and alignment. **Rated a Class I Defect.**

22-0604 N FLAKE BLOWER @ TRACK 1
Vibration data for the motor, spindle and blower show elevated vibrations at 1x and 2x RPM. The motor outboard overall is 1.2”/second velocity peak and has multiple vibration peaks within the first few harmonics. The spindle bearings also have 3x -10x harmonics which indicate possible mechanical looseness in the bearings. Inspect the drive train for alignment and worn components. As always check all fasteners and structures. **Rated a Class IV Defect.**

SOUTH PLANT UTILITIES

15-4111 COOLING TOWER E WATER PUMP
The motor bearings vibrations are still showing signs of distress. **Rated a Class II Defect.**

14-4160 MSP #3 CHILL WATER SUPPLY PUMP
Motor still shows strong 1x and 2x RPM vibrations. A 3x RPM vibration is also present in the axial. Inspect the drive train for wear and alignment. Check the structure and fasteners. **Rated a Class III Defect.**

14-4161 #2CHILL WATER SUPPLY PUMP S-B
Motor vibration data still shows elevated 1x and 2x RPM vibrations. Inspect the drive train for wear and alignment. Check the motor fan, structure, and fasteners. **Rated a Class II Defect.**

14-4162 #1 CHILL WATER SUPPLY PUMP
Motor vibration data still shows elevated 1x and 2x RPM vibrations. Inspect the drive train for wear and alignment. Check the motor fan, structure, and fasteners. **Rated a Class I Defect.**

15-4161 CENTER CHILLED WATER SUPPLY PUMP
Motor vibration data shows a drop in 1x and 2x RPM vibrations. Check the unit speed to insure correct analysis. Inspect the drive train for wear and alignment. Check the structure and fasteners. **Rated a Class I Defect.**

15-4162 E CHILLED WATER SUPPLY PUMP
Motor vibration data still shows an elevated 1x, 2x and 3x RPM vibrations. Inspect the drive train for wear and alignment. Check the structure and fasteners. **Rated a Class II Defect.**