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The following is a summary of findings from the October 2023 monthly vibration survey at the USG Greenville, MS Plant. Please let us know if there are any questions or comments.

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

Defects

Perlite

#6 Combustion Blower
Motor was not running but the following may still apply: Fan inboard bearing has some 1, 2, and 3 x rpm vibration. Fan shaft does have some run-out at the DE and is likely the cause of this vibration. It is recommended to install a TGP shaft because this fan operates at 2200 rpm and must have a precision machined shaft with run out at .0005" or less. Rated as a **CLASS II** defect.

#7 Combustion Blower
Motor was not running but the following may still apply: Vibration data suggests fan bearing looseness especially in the outboard fan bearing. Shaft may also have run out/wear. Shaft and bearings will likely need replacing soon. It is recommended to install a TGP shaft because this fan operates at 2200 rpm and must have a precision machined shaft with run-out at .0005" or less. Rated as a **CLASS III** defect.

#5 Expander Dust Collector
Motor was not running but the following may still apply: High 1 x rpm vibration remains dominant and indicates imbalance of the fan wheel. Amplitude is over 1 ips-pk. Fan wheel needs to be inspected as scheduling allows**. A field balance is likely necessary.** Rated as a **CLASS III** defect.

#6 Expander Dust Collector
Motor was not running but the following may still apply: **Fan axial vibration has increased to over 1 ips- pk.** 1-4 x rpm vibration that can still be seen in spectral data is likely due to a combination of imbalance, deteriorated grout around the fan base, and internal bearing looseness. Inspect and clean fan wheel. Inspect fan bearings for looseness by performing a lift check of the fan shaft. Should not have more than .004" lift max. Base needs to be re-grouted in the near future. Rated as a **CLASS III** defect.

#7 Expander Dust Collector
Motor has increased beat vibration that appears to be near motor/fan rpm. This may be sheave/belt related**.** Check sheaves and belts for wear and misalignment and check all base fasteners. Check angularity and offset alignment. Rated as a **CLASS II** defect.

#8 Expander Dust Collector
Motor was not running but the following may still apply: Vibration data is showing signs of possible lubrication issue in DE fan bearing. Bearing may also have early stage bearing defects. Inspect both fan bearings ensuring bearings have clean and adequate amount of grease. Rated as a **CLASS II** defect.

Hydropulper
Drive motor data shows some signs of bearing defect(s) in the motor and possible rotor issue. Gearbox also shows some signs of internal wear. Monitoring both closely. Rated as a **CLASS II** defect.

Mix-up/Reclaim

Ultra-Sorter Screen
Screen bearings are showing signs of wear. Screen bearings may need to be replaced in the near future. We will continue to monitor this issue closely. Rated as a **CLASS II** defect.

Dump Chest Agitator
Motor vibration has increased again this survey. Data shows a high 1 x motor rpm vibration with a high 2 x rpm in the DE of the motor. This is likely a coupling/alignment issue. Inspect coupling asap and ensure motor is aligned properly. Motor may have also bearing fit looseness/wear. Rated as a **CLASS III** defect.

#1 White Water Loop Pump
Pump has been recently replaced. The pump looks good, but the motor still has some high sub-synchronous pump and motor speed vibration. This is an indication of cocked sheave, belt issue, misalignment of sheaves. Pump base is also loose to concrete. Check sheaves and belts as time allows. Rated as a **CLASS II** defect.

#2 White Water Loop Pump
Motor was not running but the following may still apply: Pump data shows defects are present in the pump. Pump is also loose from the base. Pump needs attention as soon as practical. Rated as a **CLASS III** defect.

Fiberglass

#1 Oven Circ. Fan
The motor and fan inboard side has high vibration at fan speed. This may be due to some type of sheave issue. Inspect sheaves and belts soon. Ensure sheaves do not have face run-out and offset and angularity alignment is good. Ensure belts are tensioned properly. Rated as **CLASS II** defect.

#2 Oven Circ Fan
Data shows some 1, 2, and 3 x rpm vibrations present in the fan. The motor also has high vibration at 1 x fan rpm. Fan shaft may be bent and or worn. Rated as a **CLASS II** defect.

Board Line 3

Former White-Water Pit Pump #2
Motor data continues to show non-synchronous peaks in spectra with elevated 1k-20khz amplitude. Bearings are also very noisy. Motor should be replaced asap. Rated as a **CLASS IV** defect.

Vacuum Pump MOTORS (1,2, and 3)
We are seeing some mid to high frequency noise floor in the motor spectra on all three motors with Vac Pump Motor #1 being the highest amplitude of vibration. We suspect the bearings may be starting to develop electrical fluting of the races. This is a common issue with AC motors being operated by VFD's that do not having grounding protection. We highly recommend letting us install an Aegis Grounding ring inside the motor at the drive end and installing an insulated

bearing on the outboard end of the motor. **There are also signs of lubrication issue in #1 MOTOR. Ensure motors have adequate amounts of grease. Rated as CLASS I defect. NOTE that #1 Vacuum Motor is a CLASS II defect.**

#3 Vacuum Pump
DE pump bearing spectral data indicates defects are present in the DE pump bearing. We will monitor this closely. Rated as a **CLASS III** defect.

Wet End Combustion Blower
Blower bearings are continuing to trend upward on defect frequency vibration. Acceleration has had a steady increase in amplitude. These are signs of bearing defects/wear. **Bearings should be scheduled for replacement as soon as practical.** Rated as a **CLASS III** defect for now.

White Water Pump (outside)
Motor/Pump base is loose to concrete and is causing a very high vertical vibration at 12 Hz (amplitude is 1.7 ips-pk) which appears to be pump speed. Base needs to be anchored soon. Rated as a **CLASS III** defect.

Finishing

Kiln Lube Oil Pump
The pump is showing signs of wear. Impacting can be seen in the vibration data along with pump vane harmonics. We will monitor this closely. Rated as a **CLASS II** defect.

Blue Oven 1 Zone 1 Circulation Fan 1
Fan end fan bearing (outboard) data is showing signs of defects/wear. Motor and fan also have some 1 x rpm vibrations. Fan bearings will need attention soon. Also, ensure sheaves are aligned properly and belts are in good shape and properly tightened. Rated as a **CLASS II** defect.

Blue Oven 1 Zone 1 Circulation Fan 2
Outboard (ODE) fan bearing data is showing defects in the bearing. Vibration has increased in noise and vibration amplitude. This fan will need attention soon. Rated as a **CLASS III**

defect.

Blue Oven 1 Zone 2 Circulation Fan 1 and 2
Motor and fan vibrations remain high. Vibration is at fan speed in the motor and fan. This may be due to build-up on the fan. Inspect fan wheel for build- up and damage ASAP. Inspect sheaves and belts as well. Rated as a **CLASS III** defect.

#1 Finishing Baghouse Dust Collector
The drive motor has some vertical vibration. This may be due to a sheave or belt issue. This could also be a spring issue. Ensure sheaves have minimal offset and angular misalignment. Ensure belts do not have defects. Check springs to ensure they are set properly and ensure all motor fasteners are tight. Rated as a **CLASS II** defect.

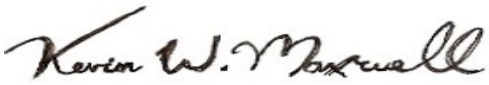
#3 Finishing Baghouse Dust Collector
Motor and fan bearing data is starting to show some peaks in spectra that are non-synchronous and appear to be bearing defect frequencies. Data of the motor and fan also indicate some possible drivetrain issues such as sheave misalignment and or belt issues. Forn now, inspect, sheaves and belts as scheduling allows. Ensure sheaves do not have face run-out and are aligned to spec. Check springs to ensure they are set properly. Rated as a **CLASS II** defect.

Hi-Pressure Water Pump

Motor data still shows signs of bearing defects and/or lube issue. Ensure motor bearings are getting adequate amount of grease. This will continue to be monitored closely. Rated as a **CLASS II** defect.

As always, it has been a pleasure to serve USG Greenville, MS. If there are any comments or questions, do not hesitate to contact us.

Sincerely,



ISO Certified Vibration Analyst, Category III

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