October 27, 2021

Victor Foster

IFF

Memphis, TN

Subject: October 2021 North Plant Vibration Report

Victor,

Below is a summary from the October 2021 monthly vibration survey of the North Plant.

***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.

**Observations**

**P3 ALJET DRYER**

**Feed Loadout Blower 13-3045**

***Equipment was down this survey however, the following likely still applies*:** Motor vertical vibration have increased. Data shows high 1 x rpm vibration which may be structurally related. Frame does not appear to be adequate for this size of motor and could be resonant or flexible. Ensure all fasteners are tight and sheaves are aligned properly. Base may need modifications.in the future. Rated as a **CLASS II** defect.

**FD Prim Cycl Trans Blower 13-3409**

***Equipment was down this survey however, the following likely still applies*:** Motor inboard vertical vibration have increased. Data shows high 1 x rpm vibration which may be structurally related. Frame does not appear to be adequate for this size of motor and could be resonant or flexible. Ensure all fasteners are tight and sheaves are aligned properly. Base may need modifications.in the future. Rated as a **CLASS II** defect.

**P3 DRYER**

**MP3B Product Mill Grinder 13-2545**

***Need to confirm if work was done on this equipment during TAR. Current data from 10/13/21 shows the following:*** Grinder data is starting to show some non-synchronous peaks in the spectra indicating some bearing defects taking place in the grinder. Severity seems low at this time. We will monitor this closely. Rated as a **CLASS II** defect.

**North Baghouse Heater Fan 13-2680**

***Need to confirm if work was done on this equipment during TAR. Current data from 10/13/21 shows the following:*** Data indicates bearing issues are present in this unit. Replace fan bearings as scheduling allows. This is rated as a **CLASS II** defect.

**P3 CURD**

**Wet in Pump 13-0030**

Pump 1 x rpm vibration has increased this month in the pump inboard (drive end) horizontal. Increased form .39 in Sep. to .7 in Oct. Pump base is in bad shape. Motor still looks good but pump base needs replacing soon. Rated as a **CLASS II** defect.

**#1 Concentration Centrifuge 13-0279**

**Vibration is still high over 1.6 ips-pk at CIV.** Centrifuge bearing data shows several harmonics of rpm present which is an indicator of fit looseness. Inspect centrifuge for bearing/fit looseness as soon as time allows. Smaller back-end bearings are also showing some signs of defects/wear. Inspect/repair these bearings also. Also, 1 x rpm has increased in centrifuge. Likely cause by imbalance. Centrifuge bearings also have mechanical looseness present according to data. **Clean out unit SOON** Rated as a **CLASS IV** defect.

**#4 Concentration Centrifuge 13-0299**

1 x motor rpm vibration has increased. Drive motor has higher acceleration than newer motor should have. Peaks are mainly electrically related. Appears to be rotor bar issue and an online and offline PdMA testing may clarify this issue. Centrifuge also has some 1 x rpm vibration still with 2, 3, 4, x rpm smaller peaks. Centrifuge bearings likely have some fit looseness. Rated as a **CLASS II** defect.

**N 5400 Desl 3rd Ext Dis Pump 13-0291**

Motor data indicates defects are present in the motor. Replace motor soon. Rated as a **CLASS III** defect.

**C30 Precip Tank Feed Pump 13-0084**

Motor data is starting to show signs of motor bearing defects. Motor should be replaced during the next opportunity. Rated as a **CLASS II** defect.

**C30 #4 Washing Centrifuge 13-0278**

Centrifuge vertical reading shows an increase in 1 x rpm vibration of the centrifuge. Amplitude is over 1 ips-pk. This likely indicates imbalance of the rotating assembly. Cleaning out unit will likely lower vibration. Rated as a **CLASS II** defect.

**C30 #5 Washing Centrifuge 13-0145**

Motor vibration has increased this month. Majority of vibration is non-synchronous to the motor and centrifuge. These harmonics are likely bearing defect frequencies. Motor should be replaced at earliest opportunity. Rated as a **CLASS III** defect.

**Flottweg Decanter #2 9301**

Outboard Decanter Bearing vibration remains high 1 x rpm vibration this month which is likely due to imbalance. Smaller rpm harmonics suggest some fit looseness may be present as well. **Unit likely needs to be cleaned and flushed.** Rated as a **CLASS III** defect.

**Lime Slurry Pump 13-4714**

Pump has had a significant increase in 1 x rpm vibration. Pump appears to be missing front foot fasteners. This may be contributing to the high pump vibration. Pump may also have imbalance. At the very least, the pump needs to be fastened down properly and re-aligned. Rated as a **CLASS III** defect.

**600 Bogey Vacuum Pump 13-6293**

***Need to confirm if work was done on this equipment during TAR. Current data from 10/12/21 shows the following:*** Pump data continues to show signs of defects/wear. Vibration also remains high in the vertical direction of the motor and pump. Base is loose to the concrete which is likely the cause of the high vertical vibration. Replace pump, coupling, and fasten base as soon as practical and realign unit. Rated as a **CLASS III** defect.

**300T MONTHLY**

**300T North Grinder 10-6421**

***Need to confirm if work was done on this equipment during TAR. Current data from 10/13/21 shows the following:*** Grinder has high 1 x rpm vibration. Grinder assembly may still have some imbalance. Ensure sheaves are not worn, aligned properly with minimal face run-out on the sheave and ensure belts are not worn and properly tensioned. Ensure adjustable motor base is not defective and all fasteners are tight. Rated as a **CLASS III** defect.

**West Collector Asp Fan 7907**

Motor remains to have an outboard vertical vibration. This appears to be a resonant condition. It is recommended to perform a coast down test on this unit to find resonant frequencies. This is rated as a **CLASS II** defect.

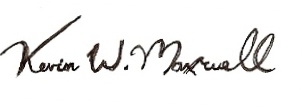
**MAIN PLANT UTILITIES**

**Air Compressor #3 0820**

Overall acceleration has increased this survey in the motor. Motor data still shows harmonics of the driven shaft of the air end. This motor does have some higher amplitudes than the other compressors; therefore, it is recommended to collect trend able vibration data on the compressor and inspect the compressor as time allows. Rated as a **CLASS II** defect.

This completes our assessment of your equipment for this survey. Thank you for your business and do not hesitate to call if you have any comments or questions.

Sincerely,

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