

October 18, 2019

TMK-IPSCO

Subject: October vibration service 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 don't hesitate to call if you have any comments or questions.

Sincerely,

David W. Shook
Service Manager

QualiTest® Diagnostics
Division of **Hi-Speed Industrial Service**
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Detailed Defects

Heat Treat North Quench Pump

Unit vibrations are up and both of the other pumps had just shut off before the survey. Vibrations are mostly at shaft speed, so check for 1x RPM defects such as debris lodged in the impeller, bent shaft, misalignment, internal wear, or possibly flow issues.

Rated a Class II Defect.

Heat Treat Hydro Hydraulics #2 Pump (Large South Pump)

Pump vibration at vane/piston pass first harmonic have dropped slightly for the South pump. Inspect the system for proper operation. We will keep an eye on this one. **Rated a Class II Defect.**

Observations

Main Mill North West Air Compressor

Male lobe pass vibrations can be seen in all measurements. High loading might be a concern. **Rated a Class I Defect.**

Threader building #2 Upsetter

Vibration in the motor at what appears to be shaft speed have dropped. The vibration is at 14 Hz or about 840 RPM. We recommend inspecting the drive train in the near future if it hasn't already been checked.

Check all bolts, sheaves, belts and tension and alignment during the next downtime as time becomes available. **Rated a Class I Defect.**

Threader Building HPU-7

Check the right pump coupling insert and re-check the alignment.

Rated a Class II Defect.