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The following is a summary of findings from the vibration analysis on Chiller-302 at the FedEx Forum.

QualiTest® uses a four step rating system for defects.

<u>CLASS I</u>: Defect is present, but effect on reliability is not clear; no immediate action is required. Continue to normally monitor.

<u>CLASS II</u>: Defect (s) present that may cause problem in long term (2-6 months). Repair during normal maintenance scheduling. Continue to monitor.

<u>CLASS III</u>; 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.

Chiller-302 CLASS III



Observation:

Motor was at 80% load during our testing. Data above is the motor outboard (ODE) horizontal. The first data plot shows a high 1 x rpm vibration with pole pass sidebands. The second data plot shows a large peak at 41 x rpm which is likely Rotor Bar Pass Frequency with rpm sidebands around this peak.

Recommendation:

Spectral data plots indicate rotor issues are present in the motor. This is likely a rotor bar or end ring issue and should be addressed soon. Having no history of this machine, it is difficult to determine the severity but due to the evidence of rotor bar problems, this can become severe very quickly due to overheating of the rotor and windings. It was also noticed that there was quite a bit of current imbalance present. This is also another sign of inductance issues due to rotor problems. We recommend swapping over to the other chiller and scheduling this motor for repair.

As always, it has been a pleasure to serve CS3. If there are any comments or questions, do not hesitate to contact us.

Sincerely,

Kerin W. Maxuell

ISO Certified Vibration Analyst, Category III



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