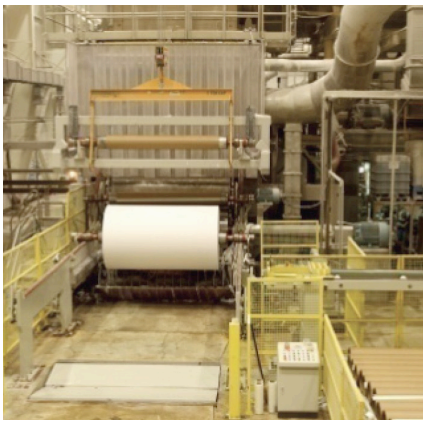
CASE STUDY

Managing critical roll bearing deterioration

Benefits of real time web integration with expert analysis

Mill technicians at Orchids Paper in Pryor, OK, suspected that two roll bearings were deteriorating on their most critical paper machine. Relying on SymphonyAI Industrial's WATCHMAN™ program to provide early warnings on impending machine faults, the Mill technicians collected vibration data from the suction pressure roll and top press roll bearings. The data was then posted to SymphonyAI Industrial's Reliability Portal for an analyst to review.



The SymphonyAI Industrial vibration analyst reviewing the data confirmed the mill's suspicions and determined that the top press roll had developed a new bearing defect from the drive side roll bearing. The overall vibration level increased from 0.10 ips to 0.35 ips. The spectrum data indicated a bearing defect.

SymphonyAI Industrial recommended that the bearing be replaced during the next scheduled outage. The suction pressure roll had already been reported by SymphonyAI Industrial as a priority 2 status but further data collection indicated continuing deterioration of the defect developing from the drive side roll bearing. Data collected one month later revealed substantially increased vibration from the bearing. The overall rise was from 0.25 ips to 0.61 ips. The abrupt increase generated a priority #1 status alert that called for the bearing to be replaced immediately. Even though the mill had a prescheduled outage in less than 18 hours, the precipitous increase in vibration demanded a prompt determination of machine health.

An SymphonyAI Industrial analyst received the data, analyzed it, and reported the results within one hour. Despite the rapid deterioration in the bearing, SymphonyAI Industrial was able to confirm that the mill could continue operating safely through the balance of planned production, avoiding a potentially costly unplanned shut down. Both bearings were replaced during the pre-scheduled outage.

Orchids Paper manufactures tissue paper from a single-location in Pryor, OK. The company serves customers in a 500 mile radius of its plant and had sales of nearly $100 million representing 54,000 tons of paper. The paper machine where the above fault findings occurred accounts for 7,000 tons of paper per year, equal to 13% of total production or approximately or $12.5 million of revenue.

SymphonyAI Industrial's WATCHMAN program is a program that trains mill technicians to collect and send vibration data to SymphonyAI Industrial analysts via the WATCHMAN Reliability Portal™. Data is collected at Orchids Paper on a monthly basis. SymphonyAI Industrial has been servicing Orchids Paper mill since 2007 and recently expanded the program to monitor additional critical equipment. When Orchids Paper sought a partner to establish and support a world-class reliability program for its sole location, it chose SymphonyAI Industrial.

Jacob Schlottman became the lead analyst for Orchids Paper in March 2009. Jacob has been with SymphonyAI Industrial since 2004. He provides vibration analysis for many industries including paper, steel, power and industrial gases. He supports WATCHMAN service programs and fan balancing. Jacob is a certified level III vibration analyst through the Vibration Institute.