Written by MT Staff
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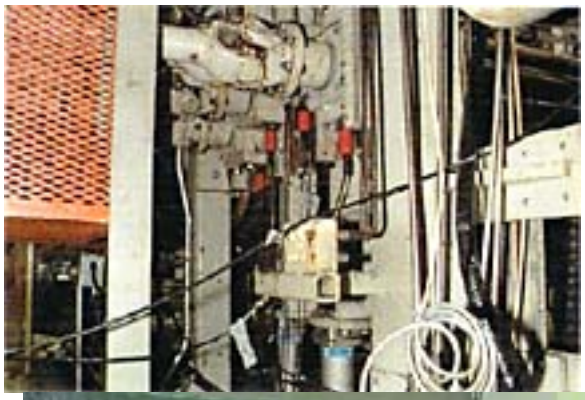

In May 1996, Mobil Chemical's plant in Belleville, ON, launched a new predictive maintenance (PDM) program on its oriented polypropylene film manufacturing lines. This division of Mobil Oil is a principal supplier of film used for cookie and snack food wrappers at companies such as Hostess and Frito Lay. The new program was designed to predict, and thus prevent, machine failures that result in significant downtime and lost revenues.

Mobil's Equipment Improvement Program (E.I.P.) team recognized the importance of monitoring the company's rotating equipment. The data collected could provide invaluable information about machine performance. After thorough evaluations, accelerometers and switchboxes were purchased from Vibra-Metrics, Inc., Hamden, CT.

The monitoring system accelerometers were permanently installed and wired to remote switchboxes to provide more consistent data than possible with portable data collectors. The switchboxes were mounted in easily accessible locations away from risk of personal injury (caused by proximity of rotating machinery), but not in locations so remote from the machinery that visual or auditory checks were impractical. Local installation of switchboxes also allowed technicians to see that the line was running normally, thus eliminating faulty readings that may have occurred if the readings were taken remotely.

The first installation of accelerometers and switchboxes was completed during a capital upgrade on one of the oriented polypropylene lines. Sensors and switchboxes were delivered and installed, and began providing data approximately 6 weeks from the time the order was placed.

From what Mobil's maintenance personnel learned during this initial installation, and with some preliminary planning, they were able to shorten the installation time for the next line to approximately 4 days. As of January 30, 1997, approximately 550 accelerometers had been installed on the two lines.

A predictive maintenance program schedules periodic readings for all mounted bearing accelerometers on a monthly or biweekly basis and for accelerometer locations cited on a troubleshooting list. Through April 1997 the staff recorded 27 "saves" that prevented unscheduled machine outages and equipment repair that could have cost the company more than $220,000. In all, 75 formal work order requests were issued by technicians to make repairs from diagnostics that could have resulted in eventual failures.

Savings are based on 1.5 times actual labor costs, actual parts costs, and a $2000/hour line cost. Cost avoidance reporting showed management that the program has paid for itself within the first year of operation. **MT**

Information supplied by Vibra-Metrics, Inc., Hamden CT; (800) 873-6748; e-mail sensortalk@aol.com

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