woodgrain millwork, inc.

MOTOR MANAGEMENT SUCCESS:

Woodgrain Millwork Installs Efficient Motor and Begins Plant-Wide Motor Inventory

Woodgrain Millwork in Fruitland, Idaho, makes wood molding for door and window parts for manufactured housing. The company operates seven plants in locations throughout the Northwest and Southeast.

benefits

- *Annual electricity cost savings of $600 from replacement of just one 250 hp motor with a new energy efficient model. Over the life of the motor, a savings of $6,000 is expected. Woodgrain has over 500 more motors in the plant.*
- *Annual electricity savings of 20,700 kwh.*
- *Rapid data collection using PalmPilot® motor inventory tool – 55 motors in one month's time.*
- *New motor inventory will track spare motors on hand, provide rewind history, be used for repair/replace decision making and choosing efficient motors.*

project overview

Mark Rawlings, plant maintenance manager, thought he had the numbers wrong when a recent calculation showed that his company, Woodgrain Millwork, Inc., was paying almost as much in utility costs as his annual salary – just to run a single 250 hp motor. The motor had failed and Rawlings needed to decide whether to repair or replace it with a new one. Company policy for this type of decision was simple – compare the cost of repair to the cost of buying a new motor, then pick the less expensive of the two. For this particular decision, however, Rawlings factored another cost into the equation – the cost of electricity to run the motor. This made all the difference in his final decision: replace the old motor with a new, energy efficient one.

At 93 percent efficiency running 24 hours a day, 6 days a week, the existing motor was costing Woodgrain $52,000 per year in electricity bills. The electricity cost was so surprising that "I called our representative at Idaho Power to confirm the rate information I was using," said Rawlings. Idaho Power confirmed the rate schedule and encouraged Rawlings to explore efficient motor options. With the help of Dennis Bowns, a field consultant with the Electric Motor Management program, Rawlings used MotorMaster+ software to compare the existing motor to comparable new energy efficient models. The software identified a new motor with 1.3 percent greater efficiency which would save Woodgrain as much as $600 annually. The new motor was also priced comparably to the cost of the rewind and mechanical repairs, which were expensive due to the catastrophic failure. Rawlings concluded replacement was the best choice and bought the higher efficiency motor, which is expected to save Woodgrain 20,700 kWh per year.

lessons learned

Rawlings learned much from this simple analysis. First, the company's current repair/replace policy is costing them money because it ignores the motor operating cost. Second, there are good software tools available to make life cycle costing and comparison shopping easy. "The fact that I could generate a written report for management comparing our options helped convince management to buy the new efficient motor," said Rawlings. Third, the analysis tools are only as good as the information at hand on the motors in the plant. Without an inventory that provides good data such as rewind and repair history, hours of operation, nameplate data, and

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more, the tools won't be of much help. Finally, since it takes time to do this analysis, doing it in advance of a motor failure can prevent a hasty decision that costs more in the long run.

Using these lessons, Rawlings committed his department to develop a motor inventory for their 500 motors in the coming year. Once established, the inventory will track spares on hand, rewind history, and be used for repair/replace decision making with energy efficient motors. He worked with Bowns to streamline the process by collecting only the most important motor data, and focusing on one set of motors in the plant at a time. He's now completed some 75 of the largest support systems motors that keep the buildings running. The next phase of the inventory focuses on specialty motors that run equipment such as molders and are hard to replace.

Bowns and Rawlings are exploring ways to speed up the collection process by using a PalmPilot® loaded with the inventory spreadsheet to enter data directly from the plant floor. Data is entered directly from the plant floor into a PalmPilot, ® then transferred to a computer for later analysis. With equipment motor nameplate data accessible on the plant floor, decisions are made based on amperage evaluations at motor control centers without interruption of the production process. The PalmPilot® is also used to anticipate materials that might be required prior to dispatching electrical staff to problem motor locations, again saving valuable time.

Rawlings plans to use the inventory data collected to date to generate reports that demonstrate savings opportunities. He expects these to be convincing enough to change the way the company makes repair/replace decisions. He knows after all, when utility costs rival labor costs, his management takes notice.

project partners

Woodgrain Millwork, Inc.
Idaho Power Company
Northwest Energy Efficiency Alliance

Motor management success stories are published by the Electric Motor Management program operated by the Electric League of the Pacific Northwest with funding from the Northwest Energy Efficiency Alliance. The stories provide examples of motor management practices undertaken by industrial plant personnel in Idaho, Montana, Oregon and Washington to improve the efficiency and effectiveness of maintenance operations. For more information about the Electric Motor Management program, call 888-720-6823, or visit the web site at http://www.electricleague.net/motors.htm

Motor Management Success Story, June 2001

PalmPilot® Streamlined Motor Data Collection at Woodgrain Millwork, Inc.

Woodgrain saved time inventorying its motors by collecting only the most important data as featured in a shortlist jointly developed with motor management field consultant, Dennis Bowns. To further save time, data is entered directly from the plant floor into a PalmPilot,® then transferred to a computer for later analysis. Data collected included: Motor ID number, amps and volts with four different time entries for preventive maintenance, nameplate data, original cost, vendor, comment lines, number of rewinds and repairs, date put in service, date put in inventory, location, machine number, bearing numbers and type, lubrication date, annual operating hours, and annual cost of operation.

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