Start With The Basics

Motors drive the industrial and commercial sectors, and therefore contribute significantly to their electric load and your electric bill. However, motors often are overlooked as an energy efficiency opportunity. Management sees computers, lighting and refrigerators every day, but is usually unaware of the contribution motors make to overall operating costs or how more efficient NEMA Premium® class motors immediately can reduce the electric bill.

Motor purchasers have a choice between standard efficiency EPAct class motors or NEMA Premium® class motors, which are typically 0.4%-3% more energy efficient. While this may seem small, consider the Department of Energy's estimates that upwards of 85% of an industrial facility's electric load comes from motor systems—*and approximately 23% of U.S. electricity is consumed by these systems alone*
. Further estimates project potential savings of 11-18% in this sector (62-104 billion kWh per year) from motor system optimization. Commercial office facilities typically see 20-25% of their electricity consumed by electric motors; in healthcare operations, such as hospitals, it's more like 25-40% because of those facilities' high, almost 24/7/365 use, of motor driven HVAC and air circulation equipment.

Higher-efficiency NEMA Premium® class motors usually will be more expensive than their less-efficient counterparts. Given the choice, facility managers and purchasing departments, often unaware of the dramatic energy and cost savings that can be achieved, will buy the lower-priced, but less-energy-efficient motor. However, the small incremental, purchase cost difference typically could be overcome in as little as 18-24 months, with continued savings through reduced electricity bills extending for the 15- to 20-year life of such motors.

To help offset this "first cost" barrier, many utilities offer customer incentives on qualifying NEMA Premium® motors. For example, when the New York State Energy Research & Development Authority (NYSERDA) "New York Energy $martSM Program" recently audited 93 motors at Roswell Park Cancer Institute, it found that 38 of them met the financial requirements to be candidates for immediate replacement with a NEMA Premium® unit. In addition, 42 motors were candidates to be replaced with a NEMA Premium® motor when they failed. If all the recommendations are followed, Roswell Park could save more than 3 million kWh—*or $256,620*
—over 10 years.

Roswell Park is not alone. Overall, in its survey of 90 facilities, NYSERDA found that 11% of

their motors were candidates for immediate replacement with NEMA Premium—*and another 52%* were candidates upon failure. Additional savings from motor system efficiency enhancements, such as installing adjustable speed drives, where appropriate, also were projected.

Motor Decisions Matter (MDM) can help you begin finding energy savings. MDM is a national campaign for raising awareness on motor management and providing support for companies interested in it. A consortium of motor manufacturers, motor service centers, trade associations, electric utilities and government agencies, including NYSERDA, sponsors the MDM campaign. The MDM Website, www.motorsmatter.org, contains information, such as a summary of energy effi- ciency programs throughout the U.S. and Canada, and tools, such as the Motor Planning Kit and the 1·2·3 Approach to Motor Management, you can use to develop a motor management plan that meets your company's needs. The information also can lead to partnerships with your local sales & service center, vendor, utility or other energy-efficiency representatives who may offer added support. For details, contact MDMinfo@cee1.org

The Motor Decisions Matter campaign is managed by the Consortium for Energy Efficiency, a North American nonprofit organization that promotes energy-saving products, equipment and technologies. For more information, contact Kellem Emanuele at kemanuele@cee1.org or telephone (617) 589-3949 x225

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