Looking for energy savings in your motor-driven systems? You can build on the motor management basics—*like selecting premium-efficiency motors and best-practice repairs*—to achieve even greater energy savings by using variable frequency drives (VFDs) [Ref. 1]. Interested? Check out these two examples of real-world success:

North Memorial

The North Memorial Robbinsdale Campus, located northwest of Minneapolis, has just over one million square feet of hospital, healthcare, office and data-center space. When a vortex damper failed in the facility's air-handling ventilation systems, North Memorial took the opportunity for a system assessment and retrofitted with a VFD. By making use of additional VFDs throughout its air-handling system, the hospital was able to reduce energy use by 30%—*and noticed energy and cost savings immediately.*

Overall, the system is now operating more efficiently and reducing wear on other equipment, which is expected to increase reliability. The North Memorial Robbinsdale site also qualified for rebates from its utility for the VFDs, resulting in a payback period of just over one year [Ref. 2].

MacKenzie Sawmill

MacKenzie Sawmill (MacKenzie), in Surrey, British Columbia, produces timber. Like most sawmills, almost everything in the facility, from loading logs to cutting them, is driven by a compressed air system. Working with its utility, MacKenzie identified 1.5 million kWh per year of potential savings from optimizing its compressed air system. With utility incentives, the payback for implementing the identified improvements was only one year. Another project replaced a 400 hp motor—*which ran continuously, despite only intermittent need*—with an SCR DC drive so that operation could vary appropriately with load. With incentives, an expected five-year payback shrank to just two years.

As these examples show, significant system savings can result from motor management, including applying VFDs to appropriate applications. VFDs control the speed of an induction motor by controlling the power (voltage and frequency) that supplies the motor. By reducing motor-speed to match the needs of the application, VFDs can use less energy to do the same

or greater work, depending on your system. When it comes to assessing a system's potential, you can find details on successful application of drives in NEMA's *Application Guide for AC Adjustable Speed Drive Systems* (www.nema.org/stds/acadjustable.cfm).

To learn more about building on the basics of motor management with the help of VFDs, visit MDM's VFD Resources Webpage (http://www.motorsmatter.org/resources/asds.html). **MT**

1.Variable frequency drives (VFDs) are also referred to as variable speed drives (VSDs), adjustable speed drives (ASDs), or inverters.

2. http://business.responsiblebynature.com/case-studies

3. http://www.bchydro.com/powersmart/success_stories/industrial_process_facilities/mackenzie_sawmill.html