Another way to drive energy savings in businesses

According to the U.S. Department of Energy, electric motor-driven equipment accounts for 64 percent of the electricity consumed in the U.S. industrial sector. Motor system energy use and potential savings vary greatly among industries. For industries that use significant amounts of electric motor system energy, the financial impact of motor system energy costs and potential savings are substantial. For industries with tight operating margins, relatively small increases in operating margin can have a significant impact on profitability. The key to these savings is upgrading to energy efficient equipment.

Many electric motor-driven devices operate at full speed even when the loads they are serving are less than their capacity. To match the output of the device to the load, some sort of part load control is in use for the majority of their life. The most efficient method of part load control, resulting in minimal wasted energy, is a variable frequency drive (VFD). VFDs accomplish part load control by varying electric motor speed. Energy savings of 50 percent or more over other part load control strategies are common.

VFDs save energy and money through:

- **Reduced operating costs;** VFDs offer greater control over the speed of AC motors, enabling the removal of throttling devices, valves and dampeners—all of which consume energy.
- **Increased reliability;** By regulating speed, VFDs prolong the life and reduce the maintenance costs of motors, driven equipment and switch gears.
- **Increased productivity;** VFDs give users a finer degree of control, resulting in more precise process operations and improved product quality.

The selection of energy efficient motors for HVAC equipment installed during renovation or new construction can result in reduced energy consumption during their operational lifetime. By converting electrical energy into mechanical energy, motors incur losses in several ways: electrical losses, iron (core) losses, mechanical (friction and windage) losses, and stray losses dependent on design and manufacturing. Energy efficient motors reduce losses because of better design, materials and manufacturing. With proper installation, energy efficient motors run cooler and thus can have higher service factors and longer bearing and insulation life.

To be considered energy efficient, a motor must meet the performance criteria published by the National Electrical Manufacturers Association (NEMA). NEMA Premium® efficient motors are designed to save energy and money by:

- **Reducing operating costs;** NEMA Premium efficient motors reduce electrical demand over standard motors by up to 18 percent.
- **Increasing reliability;** NEMA Premium efficient motors often carry longer warranties.
- **Increasing productivity;** NEMA Premium efficient motors generate less heat than standard motors, reducing downtime and maintenance costs.
- **Reducing carbon footprint;** increased energy efficiency means premium efficient motors use less electricity and reduce power plant emissions.

For more information about Focus on Energy's energy efficient technologies for businesses or about available incentives, call 800.762.7077, or visit focusonenergy.com/financialincentives.

focus on energy℠
The power is within you.

Financial incentives keep project costs down

Focus on Energy offers incentives to eligible business customers that improve the energy efficiency of motors and drives. These incentives are available through December 31, 2008.

Financial incentives are available to businesses installing VFDs for air handling or pumping applications and NEMA Premium efficient motors. Details are as follows:

- **An incentive of $50 per horsepower up to a maximum of 30 percent of the total project cost on new, installed VFDs is available, when used in conjunction with pumping or air handling (i.e., fan or blower) application.**
- **Qualifying motors must be three-phase, AC, 1 to 200 horsepower open drip-proof (ODP) or totally enclosed fan cooled (TEFC) units with nominal speeds of 1,200, 1,800 or 3,600 RPM. Incentives vary based on horsepower.**