## **New Technology Cuts Operating Costs**

By Gary S. Oelze, A C Equipment Company

uilding owners and managers are constantly seeking ways to trim utility costs from their operating budget. By now, most are familiar with lighting retrofits as a result of the government's Green Lights program. However, there are lesser known technologies that can provide even greater yearly savings: Variable Frequency Drives (VFDs) for HVAC systems and Carbon Monoxide (CO) Systems for parking garages.

Variable Frequency Drives are electronic devices that automatically control the speed of motors in HVAC systems. They cut costs by automatically operating motors at the slowest speed possible to save energy and still meet the HVAC demand. In addition, VFDs provide better temperature control and lower duct air noise. They also soft-start the fans to reduce kW demand and eliminate fan belt noise and substan-

tially decrease maintenance on fan belts and motor bearings. VFDs can be applied to supply and return fans, pumps, cooling tower fans and sometimes chillers.

Carbon Monoxide Systems activate garage exhaust fans when pre-programmed levels of carbon monoxide are exceeded. CO Systems provide the greatest return on investment of all HVAC system retrofits. Currently, over 20 million square feet of garages in Southern California use CO Systems to save money and create safer garages. The Uniform Building Code (Sec. 7.05) requires that garage exhaust fans run 100% of the time unless they are automatically controlled by a CO system. Regulating carbon monoxide levels with EMS time schedules or with time clocks is illegal. CO Systems start and stop the fans as needed and drop the total fan power consumption from 100% down to 5%.

When translated into dollar values, the savings realized by this new technology can make a substantial difference in the owner's bottom line. For example, in a 10 story office building. putting VFDs on Air Handlers costs \$52,000 and saves \$400,000 over 10 years. Thus, the payback on this investment is realized in 12 to 24 months. Similarly, a CO System for a 110 car garage costs \$8.000 and saves \$102,000 over 10 years, paying back the initial investment in just 6 to 12 months. Offering 100% return on investment. both of these energy systems provide owners with substantial savings as well as more efficiently run properties.  $\triangle$ 

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