

# **Protecting Our Environment**

## **A Green Solution For Natural Gas Distribution**

(NAPSA)—One of the advantages of clean, nonpolluting natural gas is that it is easily delivered via pipelines that stretch from gas fields in Texas and the Gulf of Mexico all the way to consumers in the great cities of the Northeast.

### **How It Works**

Approximately every hundred miles along those pipelines is a compressor station where huge compressing systems repressurize the incoming gas and send it further along its way to the next station. In the past, these compressors were powered by steam or internal-combustion engines or gas-burning turbines to deliver the thousands of horsepower necessary to keep the system operating. But today, the emphasis is on electrically powered compressor stations that approach the goal of zero emissions while meeting ever more stringent cost and reliability requirements.

The Tennessee Gas Pipe Line compressor station #110 in Morehead, Ky., is an excellent example of this rapidly accelerating trend. Originally built in the '70s, the station used a steam engine and four gas-burning turbines to power its compressors. As these neared the end of their useful life, TGPL began looking for a replacement technology that was both cleaner and more efficient than the turbines.

### **How To Make The Change**

Electric power was the preferred solution on both counts. The question then became exactly how to replace the turbines with electric motors.

There were two basic choices. One would use a variable-



### **IT'S A STRETCH—Gas supply to combined cycle power plant.**

frequency motor to provide the speed control necessary to match compressor output with pipeline demands. The second would use a less-expensive and more reliable constant speed motor to drive the compressor through a mechanical speed control system—much like the automatic transmission on an automobile.

In the end, Tennessee Gas Pipe Line chose the constant-speed motor with mechanical transmission solution for the Morehead station based on its lower initial price, lower operating cost, and long-term reliability. Today, the Morehead compressor station uses four compressors, each powered by a 10,000-horsepower constant-speed motor and a Vorecon variable-speed mechanical transmission that was built by Voith Turbo of York, Pa.

The dirty, inefficient gas turbines are gone. In their place is a smoothly running, fully automated compressor station that keeps the gas flowing reliably to the Northeast while creating a cleaner environment for all the Morehead station's neighbors in Kentucky.