

SwRI® receives \$5 million joint DOE/GMRC contract to develop advanced reciprocating compressor technology

For immediate release

San Antonio — December 28, 2004 — The U.S. Department of Energy and the Gas Machinery Research Council (GMRC) have awarded a five-year, \$5 million contract to Southwest Research Institute® to develop the next generation of reciprocating compressor technology.

The objective of the Advanced Reciprocating Compression Technology (ARCT) program is to develop compressor technology that will enhance the flexibility, efficiency, reliability and integrity of pipeline operations. The ARCT program will target five specific areas: pulsation control, capacity control, valves, sensors and automation, and systems integration.

Within the last few years, the gas industry has moved steadily toward higher-speed, larger-horsepower reciprocating compression powered by gas engines or large electric motors. These powerful machines run at two to three times the speed of the previous generation of compressors, but the increased speed and power have resulted in severe problems during start-up and initial operation. Also, varying speed complicates pulsation control, and higher speeds have resulted in significant losses in compressor efficiency, contributed in part by both pulsation control and conventional valve technology.

“This program will advance a number of promising concepts including intelligent compression technology that monitors operational conditions and automatically adjusts internal geometry to tune performance over the entire operating range,” said ARCT Program Manager Danny M. Deffenbaugh, director of SwRI’s Mechanical and Fluids Engineering Department.

“The suite of technologies developed during this program will not only provide pipeline operators with improved, affordable choices for new compression, but will also provide innovative products that can be retrofitted to existing machines to substantially improve the current infrastructure,” he added.

Deffenbaugh said the first phase of the project, which is under way, is to develop solutions for each of the five target areas. The second phase will be developing prototypes, and the third, demonstrating and commercializing products.

The Department of Energy is providing 65 percent of the funding with the remaining 35 percent funded by GMRC and its member companies. The first year of the program is being co-funded by El Paso Corporation, BP, Ariel Corporation, Compressor Systems Inc. and Caterpillar®.

For more than 50 years, Southwest Research Institute has provided services to the gas industry and has conducted the Gas Machinery Research Council research and development program.