

# TECHNIQUES FOR MORE ACCURATE CENTRIFUGAL COMPRESSOR PERFORMANCE EVALUATION

by

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field test data must be obtained on suction and discharge pressures and temperatures, rotating speed, and flow rate. In addition, gas samples must be collected and analyzed. The second phase involves calculations of head and efficiency based upon test data, and requires accurate methods for computing gas properties.

Although methods of calculating performance will be discussed briefly, the main purpose of this presentation is to discuss techniques for obtaining field test data of adequate accuracy. The degree of accuracy required in the test data will depend upon the purposes of the test and the nature of the compression process. Errors in test data result from several sources, including basic instrumentation system characteristics, sensor installation effects, and difficulties in reading the instruments (especially when steady-state conditions are impossible).

The effects of measurement errors on computed values of compressor performance parameters are given by typical example calculations. Some effects of instrument installation which may give rise to significant measurement errors are discussed.

## ABSTRACT

The evaluation of the installed performance of a centrifugal compressor unit involves two phases of effort. First, good