Optimal Design and Operation of Egyptian Gas-Transmission Pipelines

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Summary

Natural gas is increasingly being used as an energy source. Natural gas transmission pipelines transport large quantities of natural gas across long distances. They operate at high pressures and use a series of compressor stations at frequent intervals along the pipeline (more than 60 miles) to move the gas over long distances.

The objective function is given by a nonlinear function of flow rates and pressures. The optimization problem has been solved with a number of decision variables and the number of constraints to find the optimal design variables and operations of transmission pipelines over flat terrain. The objective function includes installation cost of pipelines, compressor stations, fuel consumption in compressor stations, maintenance, labor, and supervision. The software computer program LINGO (LINDO 1997) is used to obtain the solution procedure for optimal design and operation of gas-transmission pipelines.

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SEG wiki

The SEG Wiki is a useful collection of information for working geophysicists, educators, and students in the field of geophysics. The initial content has been derived from

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