

عنوان مقاله:

Optimization of energy consumption and offering a procedure for cooling gas compression facilities at gas compression stations

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خلاصه مقاله:

One of the most important methods of transporting natural gas in Iran and other parts of the world is the utilization of a network of pipelines. Compression station and turbo compressor units play an important role in gas supply through pipelines. One of the primary concerns in these units is the reduction of fuel consumption. By cooling of exhaust gas from the source station, the pressure drop in the pipeline and fuel consumption can be reduced. In this research, two stations were investigated while ASPEN HYSYS software was used to evaluate the effect of various parameters on pipeline pressure and power compressors. Based on the results of the simulation, the cooling gas at a higher flow was more economical. Moreover, with reducing ambient temperature, there was a decrease in power consumption, which was required for electro fans. Thus, higher rates and lower temperatures of the environment resulted in more profit from cooling operations. Although highest economic efficiency was obtained at the highest flow rate (60 MMSCMD) with cooling at 25 and lowest ambient temperature of -8, but the conditions for hydrate formation in the pipeline became suitable and these conditions could affect the safety of process. In this study, and taking cognizance of the the limitations of hydrate formation and economic conditions, the cooling operational guidelines for use in Qazvin station are provided

کلمات کلیدی:

ASPEN HYSYS, Compressor Stations, Economic Valuation, Naturalgas, Pipeline

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