

Skid-mounted Gathering System Hydrate Control And Process Simulation Optimization

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Abstract : Since natural gas extracted from the wellhead of a gas well, after passing through the throttle valve, causes a rapid decrease in temperature along with a decrease in pressure, which creates conditions for hydrate generation. In order to solve the problem of hydrate generation in the process of wellhead gathering, effective measures should be taken to prevent hydrate generation. In this paper, we firstly introduce the principle of natural gas throttling temperature drop and the theoretical basis of hydrate inhibitor injection calculation, and then use HYSYS software to simulate and calculate the three processes and determine the key process parameters. The hydrate control process applicable to the skid design of natural gas wellhead gathering skids was determined by comparing the hydrate control effect, energy consumption of key equipment and process adaptability.

Keywords : natural gas, hydrate control, skid design, HYSYS

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