

results of HYSYS, the feasibility of the HYSYS simulation has been demonstrated. Based on this, the influence of impurities on the formation of CO₂ hydrates and the various operation conditions in the process of CO₂ pipeline transportation are simulated. The following conclusions can be obtained:

(1) It is feasible to select P-R state equation to predict CO₂ hydrate in HYSYS.

(2) Gas impurities such as CH₄, N₂, H₂, O₂ and other gases have a small influence on the formation of CO₂ hydrates.

(3) In the process of gas CO₂ pipeline transportation, the ambient temperature has a small influence on the pressure of the pipeline. With a change in ambient temperature, the temperature along the pipeline changes greatly. CO₂ will change from a gas state to a liquid state when the ambient temperature is low. In the case of low ambient temperature, a thick layer of insulation should be used and heating of the pipeline may also be required. When the ambient temperature is higher than about 10°C, there will be no hydrates formed in the pipeline.

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