

عنوان مقاله:

An Investigation of the Effect of Naked Gas on Reduction Quality of Water Dew Point in the Gas Dehydration Process

محل انتشار:

کنفرانس بین المللی مهندسی، هنر و محیط زیست (سال: 1393)

تعداد صفحات اصل مقاله: 9

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خلاصه مقاله:

Nowadays, dehydration units done by using absorption method are used in Tri-ethylene glycol solvent (TEG) to reduce water dew point in gas. This study investigates the use of the naked gas to reduce water dew pint in gas as much as possible. To this aim, a type of wet gas was chosen and the dehydration unit was designed for it based on amount of water in it by using commercial software HYSYS, and PR equation was used for static simulation. At first dehydration unit in the form of solvent was simulated in the environment of software. Then the use of the naked gas was studied to determine its flow rate and injection place. The results of simulation revealed that if the naked gas with flow rate of 18 kg/h in a high pressure was injected to the re-boiler recovering Glycol, one would be able to reduce water dew point in gas from -14°C to -29°C . This indicates how much the use of the naked gas is effective in reducing water dew point and in preventing gas being two phases in the transferring lines as a result of liquidation of water in the low temperatures. Moreover, the effect of this method in reduction of hydrate formation temperature is very obvious. The obtained graphs from the case study reveal that the produced gas hydrate temperature for dehydration process without naked gas is 11°C , and this temperature will be -25°C in case of use of the naked gas in dehydration unit. Consequently, one can say the use of the naked gas in the dehydration unit can decrease the possibility of two-phase gas and freezing gas flow in pipelines.

کلمات کلیدی:

Hydrate Temperature, Tri-Ethylene Glycol, Reduction in Dew-Point, Dehydration

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