عنوان مقاله:

Single-tower sour water stripper: NH3 content reduction of sour gas

محل انتشار:

پنجمین کنفرانس بین المللی مهندسی شیمی و نفت (سال: 1398)

تعداد صفحات اصل مقاله: 5

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خلاصه مقاله:

In conventional sour water stripping unit (SWS), H2S and NH3 are simultaneously stripped at the top of the stripper column. This stream is sent to sulfur recovery unit (SRU) and the high NH3 content can be make trouble for SRU performance. A vapour side-stream may be effective for reducing NH3 content.In this work, effect of an embedded vapour side stream on the ammonia content of sour gas stream was simulated and investigated. It is showed that the highest the side-stream flowrate, the fastest the upward trend in ammonia recovery than H2S recovery. There is a trade-off between H2S and NH3 recovery for selecting the flow rate and the tray that side-stream taken out from. In a 15-tray stripper column, the 12th tray has the highest amount of ammonia in vapour phase, but amount of H2S wasted by side-stream should also be considered.It is concluded that the optimum case is a side -stream with mass flowrate of 2000 kg/h from 11th tray. At this flowrate, not only NH3 recovery is 46%, but also just 10% H2S is not sent to SRU and routed to incineration. In general, of course, side-stream enhances significantly energy savings in reboiler .and pump-around equipment

کلمات کلیدی:

.Sour water stripping, Sour gas, NH3 content, HYSYS simulation