Development and modeling of a resource-saving methanol recovery process diagram

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The development of resource-saving technologies is an important area for the gas industry.

When developing gas fields in cold climate conditions, it is necessary to take into account the possibility of hydrate formation.

In order to prevent the formation of hydrates in the gas stream, it is necessary to eliminate at least one of the conditions of their existence.

The main methods of hydrate control are pressure reduction, temperature increase and introduction of antihydrate inhibitors.
METHANOL RECOVERY METHODS

- Methanol regeneration by rectification
- Methanol regeneration by blow-off
- Methanol regeneration unit simulation by rectification method
Conclusions

• When modeling the existing methanol blow-off scheme, we found an insufficient degree of regeneration. In order to improve the regeneration efficiency, it is necessary to supplement the existing process diagram with an additional stage.

• We have simulated an additional regeneration stage in the UniSim program. The products of the regeneration unit are: saturated 95% methanol solution, water with a methanol content of 23 g/dm³.

• The implementation of this installation allows us to solve two problems at once. Due to the production of an additional amount of saturated methanol solution, the total cost of using a fresh inhibitor is reduced. Treatment of industrial effluents to methanol content of 23 g/dm³ will allow their disposal into absorbing wells without violation of environmental standards.
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