USE CASE

Capture Carryover from Process Towers

This study explores amine and glycol recovery downstream of process towers.

Quick Facts

Industry	Gas processing
Location	Southern Alberta, Canada
Challenge	High-velocity gas exiting process towers with carryover chemicals

Solution	Innopipe inline gas-liquid separation technology
Timeline	6 to 8 weeks from drawing approval
Results	>99%+ liquid removal, recovery of costly amine and glycol and improved process integrity

The Challenge

Canada's largest gas production company had amine and glycol carry-overs of liquids from process towers. Carried-over amines contaminated the glycol dehydration systems causing intense foaming that caused downstream glycol losses and increased corrosion risks. The towers operate at 800 to 1,000 psig through 6" and 8" flowlines with a gas flow between 37 and 70 MMscf/d. Industry practice accepts a loss of approximately three lbs /MMscf (2 × 10-4 kg/Nm^3), but greater losses are a significant cost burden. Conventionally, after-scrubbers are recommended, but often not installed, or don't function well, and cause a pressure drop. In this case, off-specification gas caused complaints downstream.

The Solution

A small footprint, non-piggable version of the Innopipe was installed downstream of the towers and achieved carried-over chemical recovery of 99%+. The chemical was circulated back to the reboilers. Innopipe captured these volumes with minimal pressure loss and high efficiency. Conventional separators would have required vessels in size ranges from 54" dia. to 60" diameter.

Results

Vessels were delivered within eight weeks of drawing approval. Pressure loss across the Innopipe units, as anticipated, was minimal, and chemical recovery reduced replacement chemical costs. Forty percent savings on budgeted costs were achieved while rapid delivery enabled installation during scheduled maintenance.

Key Outcome

Liquids downstream of towers were successfully recovered, eliminating contamination and process upsets while sales gas met quality standards at the plant gate.