CASE HISTORY CH-0174

ULTRAFAB™ MEETS ZERO EMISSIONS GAS TREATMENT LIMIT

SITUATION

An extensive drilling program was underway in northwestern Canada and considerable gas production was anticipated from the area. A multi-phase amine facility was being built to ultimately process 1.6 Bscf/D (45,300 e3m3) of gas. Each phase of construction included two amine facilities, each with a capacity of 200 MMscf/D (5,600 e3m3). Four phases or more were anticipated.

CHALLENGE

Gas flowing into the amine facility was expected to contain up to 12% CO_2, resulting in a relatively large acid gas stream. To treat the acid gas stream, each amine train was designed to be directly followed by a four-train acid gas sweetening unit (AGSU) with each AGSU capable of treating approximately 6 MMscf/D of acid gas with an H_2S concentration ranging between 1,300 and 4,000 ppm. The treated CO_2 is vented, but the regulatory body imposed an emissions limit of < 1 ppm H_2S for the amine process facility – a strict standard that eliminated several potential H_2S removal solutions.

SOLUTION

The tight outlet restriction for H_2S concentration was a key factor in selecting the UltraFab Sweet 100 H_2S Removal System as the AGSU. The UltraFab Sweet 100 system uses a patented process that effectively and continuously yields an outlet H_2S concentration of 0 ppm H_2S. Each UltraFab AGSU train consisted of four UltraFab Sweet 100 systems. Each UltraFab AGSU train was capable of treating all gas from a single amine facility. Ultimately, eight UltraFab AGSU trains – 32 UltraFab Sweet 100 systems – were anticipated. Because the facility is located in a region that experiences extreme weather during the winter months, each set of UltraFab AGSU trains was enclosed in a heated building onsite.

RESULTS

Each UltraFab AGSU train continuously removed all H_2S from 24 MMscf/D (670 e3m3) of acid gas containing 2,700 ppm H_2S concentration – approximately 2,500 lb (1,134 kg) of H_2S removed from the acid gas produced daily by each amine facility. Each UltraFab AGSU train consumed approximately 1,840 gal/D (7000 L/d) of chemical, equating to a treatment cost of $0.08/Mscf.

THE ULTRAFAB ADVANTAGE

The UltraFab Sweet 100 process removes 100% of H_2S from gas streams and effectively handles considerable fluctuations in operating parameters. The UltraFab design, coupled with Nalco Champion's technical expertise and wide-ranging field experience result in greater operational efficiency and lower chemical cost.

UltraFab solutions are available in a wide range of sizes and variations, treating gas volumes ranging from a few Mscf/D to several hundred MMscf/D and reducing H_2S concentration to virtually any outlet specification, including 0 ppm.

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GOALZERO
SAFETY MATTERS

The safety of our associates, customers and communities is vitally important. From the way we operate, to the products we develop, to how we partner with customers, our goal is zero: zero accidents, zero incidents and zero environmental releases.

At Nalco Champion, safety is more than a metric, it's a mindset. It's how we conduct ourselves, every day, everywhere it matters.

Taking Energy Further™

UltraFab
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