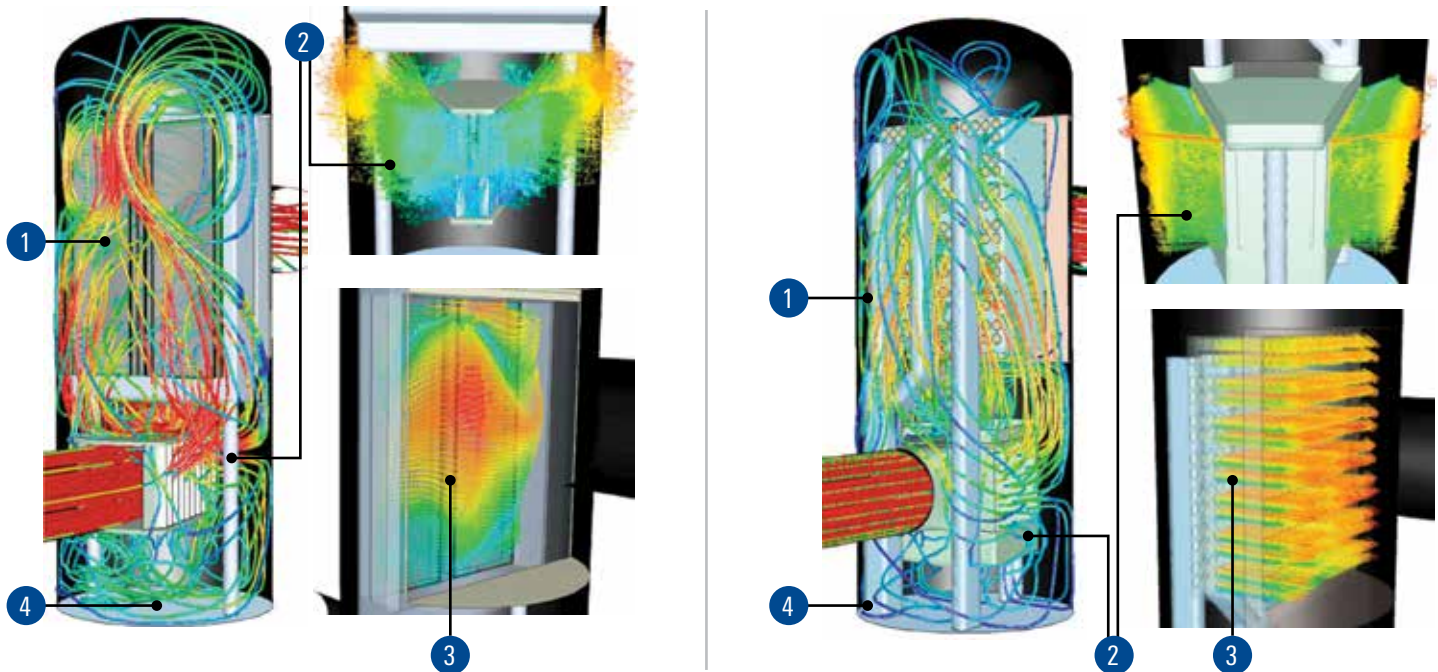


Equinor Manages 100% Rise in Troll Field Gas Production Using CONCEPT IVD Diffusers in Scrubber Vessels

High-efficiency separator internals increase capacity with liquid carryover well below 0.1 galUS/MMscf, North Sea



The conventional scrubber vessels (left) were updated to improve performance (right). Flow distribution (1) was improved by replacing the inlet device with CONCEPT IVD diffusers (2). Demisting performance was optimized by replacing the vane pack with CONCEPT DC cyclones (3). A liquid protection plate was installed to prevent reentrainment of liquid (4).

Before Equinor doubled the gas production from the Troll Field in 2010, the platform's scrubber vessels were upgraded with CONCEPT IVD* separator inlet vane diffusers and CONCEPT DC* demisting cyclones to accommodate the increased flow.

Equinor's concerns

Limited capacity of scrubber vessels designed for 1995 field performance, inability of scrubbers to accommodate higher flow, and low separation efficiency.

Why the problem was difficult to solve

The k-value through the vane pack was as high as 2.31 ft/s, small size of installed scrubber vessels (40- to 60-in ID) limited the options for retrofitting, and the platform did not have room for larger vessels.

What Schlumberger recommended

Improve flow distribution by replacing scrubber inlet devices with CONCEPT IVD diffusers; maximize separation efficiency by replacing conventional vane packs with CONCEPT DC cyclones.

What Equinor achieved

Performance verification trader tests measured scrubber efficiency at 99.3% with liquid carryover well below 0.1 galUS/MMscf, achieving NORSOK requirements.