

MPC60T choke with retrofitted external sleeve trim efficiently avoids sand-induced erosion risks in offshore well

Case study facts

Location: Offshore Trinidad

Rig or customer: Confidential

Challenge

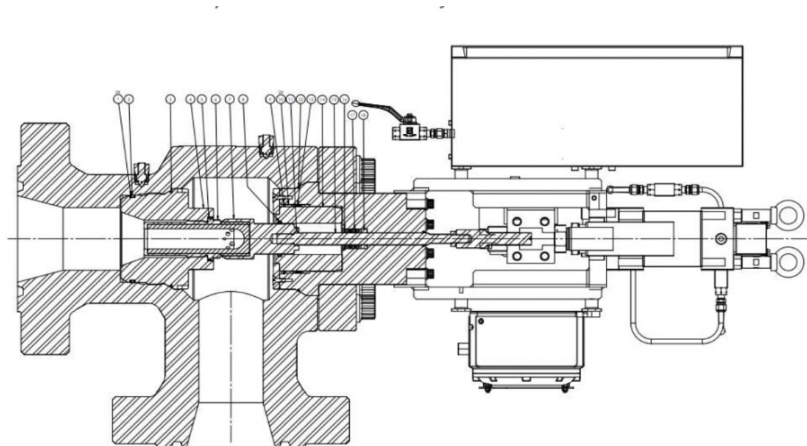
For years, a customer in Trinidad optimized production in offshore wells with the NOV MPC60T choke. Part of NOV's line of MPC (Maximum Performance Cage) chokes, the MPC60T is a large bore choke with a single-stage, plug-and-cage trim that delivers high flow capacity with lower pressure differentials.

Reservoir collapse in one of the customer's wells resulted in significant sand production over time. Because the MPC60T is not designed for high-solids production, the plug-and-cage trim started eroding quickly, leading to frequent trim changeouts. Each changeout required shutting in the well, which translated to lost production and the risk of further downhole damage.

The operator asked NOV for a choke solution that delivered the required flow capacity at a high-pressure differential—while avoiding erosive damage due to sand.

Solution

NOV typically converts the MPC60T choke to a CVCME-A choke with external sleeve trim for highly erosive, high-sand production wells. The CVCME-A is the industry's longest-lasting choke for severe service operations like shale wells. The trim's high-grade tungsten carbide metallurgy, heavy wall seat, and flow-optimized geometry improve abrasion resistance while efficiently dissipating energy and reducing velocity to protect downstream equipment.



NOV's expedited engineering solutions delivered a robust choke design that minimized sand-induced wear while maximizing production rates.

Case Study

Results

In just a few days, NOV's choke experts designed an external sleeve for the MPC60T choke. The tungsten carbide trim is typically a long-lead item, but NOV's Houma, Louisiana facility had the item available right off the shelf.

The retrofitted external sleeve trim was built and installed into the MPC60T choke within days—and without cutting on the choke body. The operator considered this innovative solution a major success that minimized well shut-in times, protected downstream equipment from erosion risks, and avoided the loss of millions of dollars of production.

Once sand production from the flowing well subsided, the operator replaced the external sleeve with the plug-and-cage trim to regain greater flow capacity. The external sleeve is currently in storage, ready to be redeployed should another MPC60T choke face sand production challenges.