

# Case Study

## Super Duplex Pressure Regulator Valve For North Sea Oil Platform

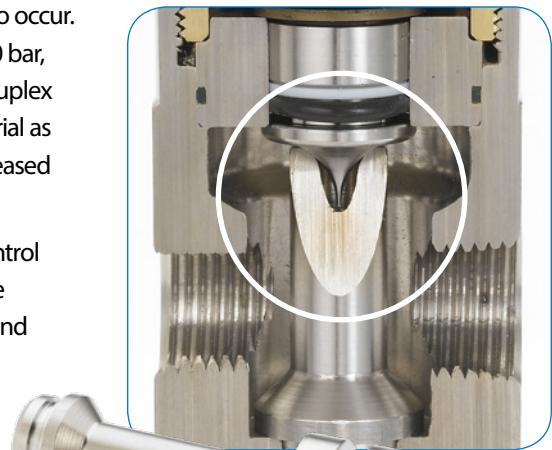
Cat Pumps (UK) Ltd is well established in the water treatment and petro-chemical industries where its triplex positive displacement pump range is the choice of engineers and companies who put quality and reliability before price. What is less known is that Cat Pumps also manufacturers valves to support the use of its high pressure pumps. When a proprietary valve will not achieve either the technical parameters or the relevant approval standards, then Cat Pumps will look to offer a suitable solution.

One recent project that illustrates this approach involves the Wolverhampton-based company Ovivo UK Ltd, a world leading supplier of equipment and solutions for the treatment of water, wastewater and ultra-pure water. Ovivo called on the resources of Cat Pumps when they were awarded the contract by a leading international oil producer to supply the Fresh Water Maker Package for two projects located West of the Shetland area near the UK Continental Shelf. The packages use the reverse osmosis process to produce fresh water from seawater.

The RO package being supplied by Ovivo requires a pressure regulator to act as a back-pressure valve, which regulates the system pressure allowing reverse osmosis to occur. The Cat Pumps pressure regulator is designed to a maximum set pressure of 70 bar, (1000 psi) and allows for a flow rate of up to 160 l/min (9.6 m<sup>3</sup>/hr). The Super Duplex components make up the wetted parts of the valve. The selection of this material as well as the design provides excellent resistance to the salt water and gives increased working life to the valve.

Adjustable spring loading allows for smooth operation and maintains close control of the working pressure. The valve is easily serviceable as it does not need to be disconnected from the pipework to access the working parts. The piston seat and Fluorocarbon O-rings are replaceable as individual parts or as a repair kit.

Space and weight restrictions meant that a conventional control valve was not a viable option. Cat Pumps has supplied Ovivo with similar pressure regulating valves on many occasions in the past, but not with the demanding test and certification requirements necessary to meet the client's specifications.



### Application Specifications

#### Fresh water reverse osmosis package

Cat Pumps Model	702666
Pressure	170 bar
Flow	160 l/min
Fluid	Sea Water
Temperature	Ambient

