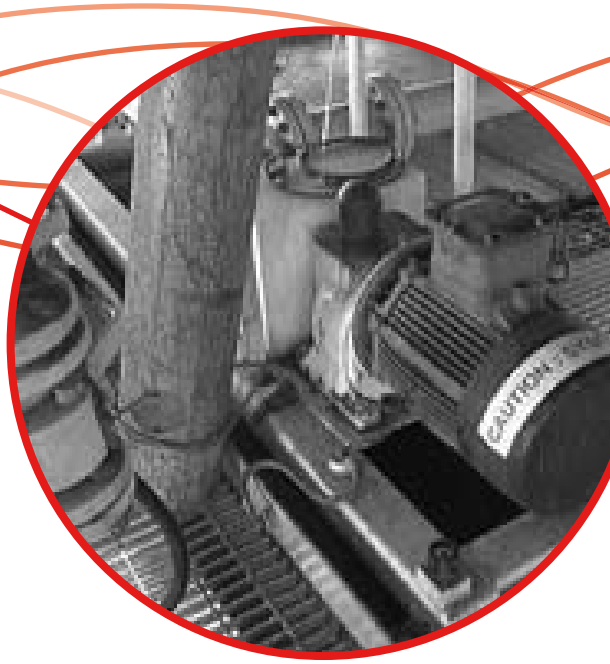

Mono® NOV's Intrinsically Safe Pump Performs Offshore

A specially adapted, intrinsically safe (IS) progressing cavity pump, from Mono® NOV, is being used by Occidental Petroleum on its Idd El Shargi North Dome (ISND) field offshore Qatar for closed drain drum transfer duties.

Pump:	**Industrial progressing cavity pump**
Product:	**Oil/produced water/seawater**
Capacity:	**20m^3/h**
Pressure:	**31 bar**
Pump Speed:	**426 rpm**
Drive:	**15kW motor Eexd Zone 1**

Occidental Petroleum of Qatar Ltd, has signed two separate development and production sharing agreements with Qatar General Petroleum Corporation for the development of the ISND and Idd El Shargi South Dome (ISSD) fields, and has been the operator of the ISND field since January 1995. Peak oil production in the ISND field is expected to reach 160,000 barrels of oil per day by the year 1999.

When service and maintenance of a particular process is required, the closed drain drum is used to collect and store the oil from the process until it can be returned to the separator unit.

Manufactured from super duplex stainless steel which has excellent corrosion resistant properties, the Mono pump has been installed directly beneath the closed drain drum. Integrated with a level switch, the pump transfers the crude oil at atmospheric temperature and pressure on a batch basis.

One of the key factors behind the decision to purchase a Mono progressing cavity pump was its suction lift capability of over 8 metres. As the installation arrangement means there is very little suction head available, Occidental Petroleum felt that a conventional centrifugal pump would have insufficient net position suction head to effectively handle the duty.

To comply with the platform's stringent health and safety regulations, the pump was supplied with a special motor which incorporates lifting lugs, an earthing boss and non sparking guards ensuring the pump unit is intrinsically safe for use in Zone 1 hazardous areas.

The pump incorporates Mono's unique Flexishaft system, which provides a single component link between the rotary motion of the drive shaft and the eccentric motion of the helical rotor. The reduced number of moving parts in the drive train eliminates wear and makes lubrication unnecessary, eliminating the risk of contamination. Its smooth pumping action means it can efficiently handle the crude oil/produced water/sea water mixture which has a viscosity of 7cp.

Robust and weatherproof, the pumps are designed to withstand the most arduous offshore conditions, including waves, wind and sea spray.

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Mono® NOV

One Company, Unlimited Solutions