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New cleaning techniques improve safety and reduce costs

BY MARIANNE SOMMER - OFFSHOREENERGY.DK

Ocean Team Windcare has developed new techniques which make it cheaper and safer to replenish hydraulic oil in wind turbine gear and lubrication systems. Another new and improved cleaning method is on its way to the market.



"We know from experience that 80 percent of all breakdowns in gear and lubrication systems are due to hydraulic fluids," states Managing Director and partner at Ocean Team Group, Jens Peter Thomsen.

Twenty years ago Ocean Team Windcare caught sight of a niche, which the company has nurtured ever since. It specialises in monitoring and analysing the condition of hydraulic oil, and cleaning hydraulic systems. The company originally worked only within oil & gas but has been working in the offshore wind industry too since 2009. The shift brought about innovative moves which reduce the cost of replenishing the oil in wind turbine gear and lubrication systems. The new method also means that these tasks are performed more safely than before.

"All too often people forget about the oil in gear and lubrication systems. Operators tend to replace valves and pumps in many systems, only to discover that the problems were in fact caused by the oil. Our work is therefore incredibly important," says Jens Peter Thomsen, Managing Director and partner at Ocean Team Windcare.

"We have developed a system which allows us to change the gear oil in offshore wind turbines by hauling hoses up to the gear box. We then fill new gear oil from the supply vessel while pumping the used oil into tanks on the ship. The vessel

carries a wave-compensating system which we have developed. The system compensates for movements in the water and ensures that hoses stay where they should be and therefore present less of a threat to personnel and the environment. We had this system patented last year,” the managing director adds.

Another new technique in the pipeline

The benefits of using the new method compared to the old one – in which the canisters were used to fill and empty oil in gear and lubrication systems – are that the risks of oil spillages are minimised and the new process saves time. In the past the company could change oil in two turbines each day. Today they average 2.5 turbines a day – and sometimes they even manage three! When you include turbine downtime in the calculations, the new system offers operators significant savings.

And operators can look forward to more savings. A new system, which has been in the pipeline for 2-3 years, is expected to reach the market at the end of this year. It is a new system for flushing bearings.

”The system dissolves grease in the main bearings and flushes impurities away. After flushing, the gear system is ready for inspection and grease replenishment. The new method is an improvement on the one we use at the moment, where the gear system has to be dismantled mechanically and the grease removed manually,” says Jens Peter Thomsen.

The new system will be suitable for use in connection with changing hydraulic oil in wind turbines.

”It is important that we resolve several tasks at once for our customers. There are good opportunities here to reduce costs,” reasons Jens Peter Thomsen, who was personally involved in developing these systems.

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