FILCOM Application example – Wind energy

FG Bilge water separator for energy recovery

Wind Energy

Initial situation

Generating electricity from renewable energy sources is an important contribution to climate protection and a viable business field for the future. Wind turbines convert the kinetic energy of the wind into electrical power via rotors and the associated drive system - of course, only if the wheels keep moving. To have a secure future themselves, wind turbines have to be economical. This requires reliable and continuous operation even under adverse weather conditions. With advanced separation solutions, Filtration Group Industrial creates the conditions for this and offers the use of flexible and efficient solutions.

GLOBAL TECH I

Solution statement

- Bilge alarm units are reliable helpers in the special field of "oil-in-water measurements" to monitor and limit oily effluents in shipping.
- Our customer Global Tech I Offshore Wind GmbH has a 15 ppm bilge alarm monitor in operation offshore. The device of the OMD-24 series complies with the current regulations of IMO Resolution MEPC.107(49)
- The unit is equipped with two set alarms at 15 ppm. If an alarm set point is exceeded, the alarms are displayed on the front panel and the appropriate relays are switched. If a malfunction occurs, the system LED on the front panel will change from flashing green to solid red. A status input to the bilge water deoiler is required to control the data accordingly.

Customer value

- Innovative technologies and proven processes deliver optimal results in bilge water deoiling. That is why Global Tech I Offshore Wind GmbH has relied on Filtration Group Industrial bilge water separators for many years.
- Bilge water deoilers from Filtration Group Industrial meet the required standards with a separation efficiency of 5 ppm residual oil content.
- The system is based on the proven coalescer process, which utilizes different physical properties of oil and water. A reliable, fully automatic separation of oils from process water.
- The FILCOM logistics concept was able to ensure an efficient and fast spare parts supply for the bilge alarm unit at the customer's site.

Challenge

Global Tech I Offshore Wind GmbH operates the 400-megawatt Global Tech I North Sea wind farm, with business and power plant operations managed from Hamburg. Protection of the marine environment and the safety of shipping traffic are important factors in the siting of a wind farm. The Global Tech I offshore wind farm alone produces enough electricity for 450,000 households.

The transformer platform is the link between the individual wind turbines of a wind farm. As it stands either in the sea or sometimes in the rain, spray and rainwater accumulates on the wind farm's transformer platform. This mixes there with various oils from leaks and chokes. To protect the oceans, the water must not be returned unfiltered to the North Sea, but must be filtered, a process that must also be monitored by highly sensitive measurement. A bilge water deoiler from Filtration Group Industrial (formerly MAHLE Industriefiltration) was therefore installed on the platform to clean the water in accordance with current environmental regulations. Separated oils and solids are collected in a container.

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