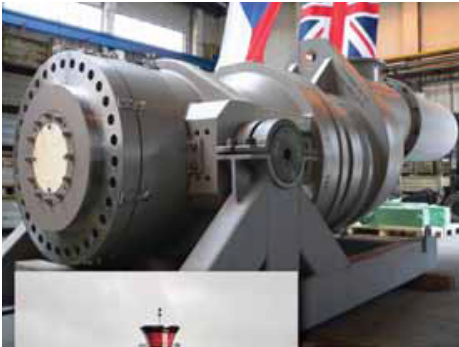


Bearings make marine application splash

By Daniel Thalmann

Tidal current turbines are among the latest developments in renewable energy utilization. Installed undersea, the turbines are driven by the tidal flow of water.

Bearing manufacturer NKE Austria supplies the bearings for the gearboxes of these “underwater windmills.” The SeaGen tidal current turbine, developed by Marine Current Turbines Ltd. based in Bristol, UK, employs NKE technology. Rated at 1.2 MW the turbine works much like an



The SeaGen gearbox for harnessing tidal power is equipped with nine types of NKE bearings. Inset: Artist's impression of SeaGen units in operation.

“underwater wind turbine,” but is driven by the tidal current rather than air.

Unlike wind energy, which is subject to the random nature of the weather, tidal flows are much more predictable. Moreover, due to the higher density of water compared to air, underwater turbines do not need to be as large as wind turbines. SeaGen has been installed in Northern Ireland's Strangford Lough and is the world's first commercially operated tidal current turbine.

The SeaGen turbine's gearbox has been designed by Orbital2 Ltd., a British specialist for renewable energy gearboxes, and is made in the Czech Republic by wind and industrial gearbox specialist Wikov MGI. The gearbox developers and manufacturers have selected NKE Austria to supply the bearings.

Decisive in their choice were NKE's excellent technical support and short production lead times. NKE supplies nine different types of bearings for the gearboxes, including deep groove ball bearings, tapered roller bearings, cylindrical roller bearings and four-point contact ball bearings, with outer diameters from 300 to 1090 mm.

Wind turbines also operate under arduous conditions. The bearings used in them must work reliably and have a long lifespan. Rolling bearing design service life in wind turbines is 175,000 h. **DPN**

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