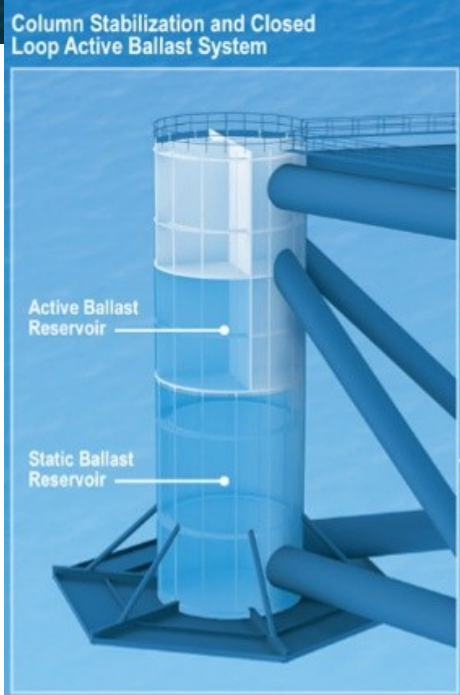


Case Study

Houston Offshore lean on PSM level transmitters for innovative leg column ballast control on the WindFloat offshore turbine platform



Results

- Tankstar 260 level transmitters ensured accurate and responsive level measurement of the water ballast in the three column legs used for platform height and level stabilisation.
- PSM's extensive experience in ballast water level measurement in offshore platforms and floating docks provided Houston Offshore with pre-sale application and engineering support, that reduced project engineering costs and commissioning time.
- Products installed are designed and manufactured to marine standards, with all relevant approvals, with simple to install functionality and the surety of a long operating life.



Part of the **TankView** product group



Customer

Houston Offshore, a major American offshore engineering company, designed and built the platform for their customer, the wind turbine platform operator Principle Power.

WindFloat is Europe's first free-floating offshore wind turbine and targets the rapidly maturing offshore wind sector by eliminating current deepwater limitations with an innovative solution. WindFloat is a floating platform support structure for offshore wind turbines with a simple and economic design.

The wind turbine is 54 m tall and weigh 12,000 tonnes with a generating capacity of 2 MW. It is the first of six installations, located off the North Portuguese coast near the city of Porto, to test the design concept and location.

Application

The innovative features of WindFloat dampen wave and turbine induced motion, enabling wind turbines to be sited in previously inaccessible locations where water depth exceeds 50m.

Critical to the design is its "leg column stabilisation and closed loop active ballast management system". This allows the platform to maintain a flat and constant height above the water, whatever the sea and wind conditions, which provides the turbine blades stable operating conditions to generate their maximum power.

This active ballast management system relies on accurate and responsive liquid level transmitters to measure the sea water ballast level in in each column leg and transmit this to the platform control system.

Solution

PSM had experience of this type of ballast level control application from previous customers in the offshore oil & gas platform and floating dock construction businesses. We were able to understand the engineering requirements and offer advice on the best technical solution.

The Tankstar 260 is a an accurate and stable level transmitter, designed and constructed specifically for marine applications, with an extensive list of references from previous successful applications.

With the help of PSM, Houston Offshore were quickly able to design and specify this part of the platform instrument package. This saved them time and money in project engineering costs.

Factory configuration ensured Tankstar 260 was simple to install and commission, again saving time and money during construction and sea trials.

These products are reliable and robust to ensure problem free and low maintenance operation in the future, which is of critical importance in an un-manned offshore installation, where a support vessel and crew must be deployed otherwise.

Products Supplied

[Tankstar 260](#) hydrostatic levels transmitters