



Strainstall

Structural Monitoring System on an FPSO



The Banff FPSO has a unique 'wind sail', which also acts as a flare tower, located at the aft end of the vessel. Strainstall was required to design, manufacture and install a structural monitoring system to investigate the environmental effects on the structure.

The system due to its location had to be intrinsically safe, the system had to be generally unattended and incorporate software to carry out processing of raw data onboard to meet the following objectives:-

- Measure the stresses present at the specified strain gauge positions
- Record the variations in stress peaks
- Calculate the fatigue damage present using an approved S-N curve
- Maintain a record of the cumulative fatigue damage
- Record high and low frequency vibrations on the structure
- Provide early warning of any potential cracking at the sensor positions
- Record wind speed and direction
- Store data and report in pre-defined format

Strainstall's team of experienced engineers operate from offices in Cowes, Bath and Aberdeen (UK) and Tønsberg (Norway).

This system was required to be intrinsically safe.

All sensors and instrumentation had to be approved for the safe operation of the system in its environment

Sensors include:

- Accelerometers
- Strain gauges
- Anemometer

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