

Extended abstract

No full paper will be submitted

AkerBP - Comparison of a Liquid clamp-on flowmeter vs turbine meter for separator oil measurement

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Topic

Clamp-on flowmeter compared to fiscal turbine meter on 1st stage separator, rebuild metering run from 8' to 4', clamp-on flowmeter used to determine water cut

Abstract

On AkerBPs Alvheim FPSO, 2 inlet separators are continually in use to measure and allocate daily production from various fields with different ownership. Topside multiphase meters are calibrated against a one of the inlet separators on a monthly basis. Both inlet separators are equipped with fiscal specification metering equipment.

Due to lower flowrates, the existing (2x parallel) 8' oil metering runs were becoming too big to accommodate the lower flowrates. It was decided to rebuild one of the 8' metering streams to a 4' metering stream. Stream 1 (8') consist of turbine meter and USM in series with full possibility for comparison and verification of correct flowrates during i.e multiphase flowmeter calibrations. Stream 2 used to consist of a single 8' turbine meter.

Stream 2 was decided to be rebuilt into 4' with a single turbine meter. This would lose the added assurance of dual flowmeters that was found on stream 1.

It was decided to add a new type clamp-on flowmeter as secondary flow meter on the planned 8' to 4' stream 2 rebuild. This clamp-on flowmeter would also be able to measure water cut.

The vendor of the clamp-on flowmeter was given the complete project.

-Engineer and produce the new piping required to go from 8' to 4' for the measurement section

-Include a 4' clamp-on meter

-Provide space for a new 4' turbine meter provided by AkerBP

-Test the whole setup including new piping, clamp-on meter, and turbine meter in 2 different independent flow labs with satisfactory results before installation offshore

This presentation will give a quick overview of the setup and why it was decided to do this. Flow data and comparison of the clamp-on meter and the turbine meter from a) onshore lab testing and from 2) operation offshore will be presented and discussed.

The vendor of the meter will take part in this presentation to explain the technology behind the meter and its limitations