

Emerson brings new digital technology to Broom field in North Sea

Austin, Texas-based Emerson Process Management is supplying Lundin Britain Ltd. with digital technology designed to expand automation of the company's Broom field development in the UK North Sea near the Shetland Islands.

Lundin Britain, a unit of Sweden's Lundin Petroleum, operates the Broom, Heather, and Thistle fields in the UK sector. The Broom field is located about 4.5 mi (7 km) to the west of the Heather Alpha platform at the western edge of the North Viking Graben and comprises Middle and Upper Jurassic oil reservoirs formerly known as West Heather.

Discovered in 1976 and delineated the next year by its original operator, Unocal, the field was left undeveloped until Lundin acquired it ultimately in 2003, and brought it on production in August 2004 with subsea wells operating as tiebacks to the Heather Alpha platform.

According to Emerson, it has supplied PlantWeb digital automation architecture with the DeltaV system and Foundation fieldbus communications technology to Lundin Britain for the Broom development.

PlantWeb architecture is a digital automation approach, using communications technology such as the Foundation fieldbus on the Heather Alpha platform to collect actionable diagnostics and process information from field devices and to distribute the data to Lundin operations, maintenance and management teams. The project also involves expanded monitoring of various aspects of the operation on the Heather platform such as pressure measurement in the risers.

The project furthers a continuing working relationship between Emerson and Aberdeen-based engineering contractor Kellogg Brown and Root (KBR) on various other offshore projects.

Mass flow rate monitoring

According to Emerson, its field devices on Heather include Rosemount 3095 MV multivariable transmitters that provide fully compensated mass flow rate calculations in the field for orifice plate measurements. The mass flow rate is monitored from the complex Broom subsea systems.

Two 8-in nominal bore pipelines transport Broom oil to the Heather platform, where total flows are measured using MicroMotion Coriolis mass flow meters before export to the Sullom Voe terminal on the Scottish coast.

Production from the Broom field topped 20,000 b/d within two months after startup in August 2004.

According to Emerson spokesmen, most of the control system on Heather is pneumatic, being the original control scheme installed prior to commissioning of the platform in 1977. Heather was one of the first major offshore platform projects in the northern North Sea area. Addition of the PlantWeb architecture and the DeltaV system has enabled Lundin to make instrumentation updates with improved integration of platform functions.

Automated functions

Emerson Process Management, a business unit of Emerson, is a provider of automated production, processing and distribution functions in the oil and gas, refining, chemicals, pulp and paper, power, food and beverage, pharmaceutical industries, among others. The company combines its products and technology with industry-specific engineering, consulting, project management and maintenance services. Besides PlantWeb, DeltaV, and Rosemount, its registered brands include Fisher, Micro Motion, Mobrey, Daniel, Ovation, and AMS Suite. ◉

For more information, call toll-free 888 752-6893 or e-mail: infocentral@emersonprocess.com.

The project to expand automation of the Broom North Sea development using Emerson Process Management's PlantWeb architecture also involves expanded monitoring of operations on the Heather Alpha platform.

