Siemens and Statoil develop a subsea hydraulic power unit

Siemens and Statoil have jointly developed and qualified a subsea hydraulic power unit for use in offshore oil and gas fields in order to provide hydraulic power right at the well site. The Subsea Hydraulic Power Unit (SHPU) supplies low pressure and high pressure control fluid to the subsea control modules. The subsea control module operates the hydraulic valves, the downhole safety valve and downhole chock/sliding sleeve. The hydraulic power unit can be used in the event that the umbilical fails and also as an alternative to the hydraulic lines in the umbilical. The power unit has successfully completed the qualification process, in which it has passed function tests under hyperbaric pressure equal to a water depth of 500 meters.

The SHPU is an important building block in the industry-wide vision for a subsea factory, where the process plant is placed on the seabed. This unit was developed to be used as a contingency for an umbilical failure on a field in the North Sea. In addition to a repair function, the SHPU can also be used to extend the life-time of existing (brown) fields. For new (green) field developments, especially on deep water and long step-outs, the SHPU can be a cost-efficient alternative to complex umbilical lines. The most significant advantage will be to replace hydraulic power transmission lines with local subsea hydraulic power generation and storage.

In addition this technology removes issues with hydraulic friction losses in umbilical lines and reduces topside requirements for space and weight capacity. The SHPU has standardized interfaces, and is conceptually designed as a subordinate to the local subsea control module; connected by means of a SIIS level 2 or SIIS Level 3 interface.
The SHPU takes auxiliary electrical power from existing infrastructure at the well site, and then supplies hydraulic power required for operation of the well valves. Operated in this way, the hydraulic system can achieve faster response and less energy consumption. During operation, the SHPU does not require any changes in emergency shut-down strategy of the well. The unit can be adapted to all known hydraulic interfaces and is uncomplicated to install subsea, as it is designed for single lift installation with ROV assistance.

This press release is available at [www.siemens.com/press/PR2015040179EMEN](http://www.siemens.com/press/PR2015040179EMEN)
For further information on Siemens subsea, please see [www.siemens.com/energy/subsea](http://www.siemens.com/energy/subsea)

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