PFISTERER Press Release
November 2014

Universal connection technology for 66 kV inter-array cables

In future, wind farms will be cabled internally with 66 kV instead of 33 kV, according to the Offshore Wind Accelerator (OWA) support program. While some technologies are still under development or undergoing testing, there is a cable-independent connection system that has stood the test for this application: CONNEX has been in use for over 25 years and was just recently expanded to include technology for 66 kV inter-array cabling.

Lower costs and environmental impacts, higher supply security and power levels – the potential advantages of increasing the voltage to 66 kV when connecting wind turbines by cable to substations are known. To promote the technical innovations required for this, the industry and the British Department of Energy and Climate Change have initiated the OWA program with the support of Carbon Trust, an internationally operating organization committed to carbon reduction, which promotes, among other things, the development of new 66 kV inter-array cables, whose connection requires advanced connection solutions

"Connection and connector technology used offshore for plastic cables has been influenced by onshore standards like the 33 kV outer cone systems," explains Christian Späth, Product Manager for the CONNEX connection system at PFISTERER, "However there are not yet any systems like those available for the intended 66 kV cabling, but there are some inner cone solutions instead."

For offshore with experience

CONNEX has been on the market as the first inner cone system for all standard XPLE and EPR cables since 1978. It has been used for maximum operating voltages up to 72.5 kV in onshore applications since 1988. Longe experience supported the step into different offshore applications: CONNEX is used for transformer and switchgear (GIS) connections up to 170 kV, and it has been in the field for inter-array cabling on the medium voltage side for more than 6 years.

In addition to cable connections for transformers and gas insulated switchgear (GIS), the system includes surge arresters as well as dummy plugs and test cables. Combined with the newest addition to the range, the test cables result in flexible test equipment: the new connection joint for cable interfaces up to 72.5 kV was introduced in the third quarter of 2014. Like all CONNEX connection components, it is resistant to salt water, UV rays and is submersible. If water manages to enter one of the connected cables as a

HV-CONNEX offers dry pluggable cable connectors for transformers and gas isolated switchgear (GIS) as well as pluggable joints for the 66 kV voltage level

Contact:

PFISTERER Marketing
Peter Kaiser
peter.kaiser@pfisterer.de

PFISTERER
Kontaktsysteme GmbH
Rosenstrasse 44
73650 Winterbach
Germany

result of a cable failure, the integrated longitudinal water barrier prevents penetration of the others. DVN GL, the largest ship and offshore classification association in the world, confirms the offshore qualities of the HV-CONNEX joints.

Qualified with a new cable

"Efficiency and safety are inherent standards in the development and expansion of this system, " Späth adds, "That's why all CONNEX connection components are dry pluggable, touch-proof and maintenance-free. That makes installation and operation easier." Features that convince cable manufacturers aswell. "By participating in the OWA program, we are pushing the introduction of our new 66 kV inter-array cables," says Volker Aue, Product Manager for Cable Accessories at Nexans, "An important step in this process is standardized qualification in suitable cable connection systems. In the meantime, this has been achieved with PFISTERER. In April 2014 we successfully qualified one of our new cables combined with the CONNEX solid-insulated joint and the CONNEX separable connector up to 72.5 kV."

PFISTERER

PFISTERER is a leading independent manufacturer of cable accessories and overhead line accessories for the sensitive interfaces in energy networks. The business group is headquartered in southern German Winterbach in Stuttgart. PFISTERER develops, produces and sells internationally successful solutions for voltage levels from 110 V to 850 kV. With a full range of products for use in energy networks, consultation, assembly and training, the manufacturer is a valued partner worldwide for companies involved in energy supply, plant construction and electric rail transportation. PFISTERER operates production sites in Europe, South America and South Africa and has sales branches in 18 countries in Europe, Asia, Africa, South America and the USA. The business group currently employs around 1,400 staff members.